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Working Paper 8

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# **An In-depth Analysis of Individual Determinants and Outcomes of Health Worker Motivation in Two Jordanian Hospitals**

*September 2000*

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- > *improved incentives within health systems to encourage agents to use and deliver efficient and quality health services; and*
- > *enhanced organization and management of health care systems and institutions to support specific health sector reforms.*

PHR advances knowledge and methodologies to develop, implement, and monitor health reforms and their impact, and promotes the exchange of information on critical health reform issues.

## **September 2000**

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# Abstract

This paper represents one of three components of a larger study examining health worker motivation in two hospitals in the Hashemite Kingdom of Jordan. The goal of this in-depth analysis was to assess which motivational determinants seemed to most influence outcomes of the motivational process. Using self-administered, quantitative questionnaires to workers and supervisors, data were collected on 506 workers in two Jordanian hospitals. A full range of 20 psychometric scales and sub-scales were used to measure determinants of motivation: worker expectations, values, personality factors, individual work attitude differences, organizational culture, organizational and task characteristics. Motivational outcomes were measured in terms of what workers do (performance), what they feel (affective motivation, such as satisfaction and commitment) and what they think (cognitive motivation). Using forced-entry hierarchical regression models, many individual differences and perceived contextual factors influenced how workers felt and thought about their work experience, with self-efficacy, pride, and co-worker organizational citizenship behavior playing the largest roles. Fewer effects were seen on performance as assessed by the worker, and no individual difference scales explained variance in supervisory assessed performance. This research in Jordan has indicated that public sector workers in Jordanian hospitals have the desire and aspirations to perform well on the job. However, many organizational and bureaucratic constraints impede workers from doing their job as they might wish and to feel satisfaction with their efforts. The research demonstrated the feasibility of doing this kind of study in the Jordanian environment.

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# Acronyms

<b>IWQ</b>	Individual Worker Questionnaire
<b>MOH</b>	Ministry of Health
<b>PHR</b>	Partnerships for Health Reform Project (USAID)
<b>SAP</b>	Supervisory Assessment of Performance
<b>USAID</b>	United States Agency for International Development



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# Foreword

Part of the mission of the Partnerships in Health Reform Project (PHR) is to advance “knowledge and methodologies to develop, implement, and monitor health reforms and their impact.” This goal is addressed not only through PHR’s technical assistance work but also through its Applied Research program, designed to complement and support technical assistance activities. The program comprises Major Applied Research studies and Small Applied Research grants.

The Major Applied Research topics that PHR is pursuing are those in which there is substantial interest on the part of policymakers, but only limited hard empirical evidence to guide policymakers and policy implementors. Currently researchers are investigating six main areas:

- > Analysis of the process of health financing reform
- > The impact of alternative provider payment systems
- > Expanded coverage of priority services through the private sector
- > Equity of health sector revenue generation and allocation patterns
- > Impact of health sector reform on public sector health worker motivation
- > Decentralization: local level priority setting and allocation

Each Major Applied Research Area yields working papers and technical papers. Working papers reflect the first phase of the research process. The papers are varied; they include literature reviews, conceptual papers, single country-case studies, and document reviews. None of the papers is a polished final product; rather, they are intended to further the research process—shedding further light on what seemed to be a promising avenue for research or exploring the literature around a particular issue. While they are written primarily to help guide the research team, they are also likely to be of interest to other researchers, or policymakers interested in particular issues or countries.

Ultimately, the working papers will contribute to more final and thorough pieces of research work, such as multi-country studies and reports presenting methodological developments or policy relevant conclusions. These more polished pieces will be published as technical papers.

All reports will be disseminated by the PHR Resource Center and via the PHR website.

Sara Bennett, Ph.D.  
Director, Applied Research Program  
Partnerships for Health Reform



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## PHR Scholars:

- > Ayman Mansour
- > Dr. Fatina Halawani
- > Amal Al-Okour
- > Rami Farah
- > Bushra Al-Ayed
- > Basil Zoughool
- > Mazhar Sou'bi

## MOH Research Participants:

- > Dr. Najwa Al-Hwaidi
- > Dr. Hiyam Al-Youssef
- > Dr. Faris Dababneh Al-Ayed
- > Ibrahim Al-Laham
- > Dr. Youssef Haddad
- > Dr. Mohammad Al-Kharisa
- > Majeda Al-Hadidi
- > Radi Ahman Yaseen
- > Iyad Fayyad

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- > Al-Basheer Hospital: Dr. Kahlid Hudeb, Dr. Atef Nimri, Maram Halawa
- > Al-Ramtha Hospital: Mohammed Azzam, Hani Sa'ad, Monther Al-Juneidi

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# Executive Summary

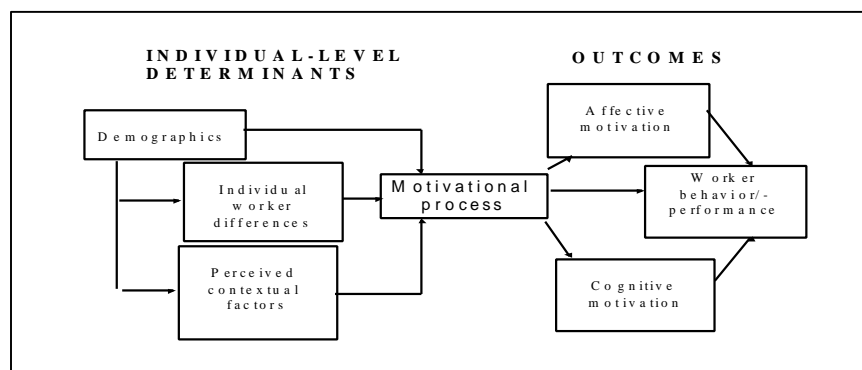
This paper represents one of three components of a larger study examining health worker motivation in two hospitals in the Hashemite Kingdom of Jordan. The objectives of this in-depth analysis were to: 1) assess the reliability of well-tested psychometric scales when applied in the Jordanian context; 2) compare ratings of various determinants among different categories of workers; and 3) test associations between various determinants and outcomes of motivation.

**Methods:** The study took place at the central referral and teaching hospital and at a small community hospital. Data were collecting using three qualitative instruments: a self-administered individual worker questionnaire (IWQ), a self-administered supervisory assessment of performance (SAP) questionnaire for supervisors of sampled workers, and a compilation form for data on workload and absenteeism. Full data (IWQ, SAP, and secondary data) were available on 506 workers.

A full range of 25 psychometric scales and sub-scales were used to measure determinants and outcomes of motivation. Determinants were grouped into two large categories: individual worker differences and perceived contextual factors. Individual worker differences were measured with 10 scales covering the areas of worker expectations, values, personality factors, individual work attitude differences. Another 10 scales were used to measure organizational culture and organizational and task characteristics. Motivational outcomes were measured in terms of what workers do (performance), what they feel (affective motivation, such as satisfaction and commitment), and what they think (cognitive motivation). The four performance sub-scales were measuring using both worker and supervisor data: conscientiousness, general work attitude, getting along with others, and attendance.

Seven sets of hierarchical (linear) regression models were run, based on initial forced entry of a set of demographic variables: hospital, profession, gender, and age (model 1). A second-level model (model 2) contained a series of determinants entered simultaneously. Entering the demographic variables first allowed calculation of additional variance explained by the motivational determinants, as calculated by the square of the part correlation values. Figure ES-1 describes the conceptual framework for the analysis.

**Figure ES-1. Conceptual Framework for the Analysis of Determinants and Outcomes of Health Worker Motivation**



**Overall Findings:** Mean measures of affective and cognitive motivational outcomes indicate that hospital workers had neutral or moderate levels about how they feel and think about their work (ranging from 2.4 to 3.5 on a 5-point scale). Performance ratings were higher, with supervisors rating workers lower than did the workers themselves; however, mean ratings were in the 3.9 to 4.5 range, again on a 5-point scale.

**Effects of demographics on motivational determinants and outcomes:** Significant differences among various demographic groupings were found, both in motivational determinants and motivational outcomes. Profession and age had wide effects on affective and cognitive motivation, and profession and hospital had effects on the levels of performance ratings. Associations with measures of individual worker differences were most frequent for gender, and some for profession and age (most notably self-efficacy, values orientation, and desire for work achievement). Profession, gender, and age also were frequently associated with differences in perceived contextual factors. Lower ratings in motivational outcomes were most common in nursing and allied health professional staff, among women, and among younger staff.

**Influence of motivational determinants on motivational outcomes:** How people feel and think about their work was influenced by every construct, with the exception of expectation of personal and social consequences of poor performance. Stronger influences came from the organizational culture measures of pride in work and organization, and organizational citizenship behavior. In impact, these were followed by confidence in one's ability to do the job (self-efficacy), the feeling of having some control over their work lives (work locus of control), and ability of their job to provide a stimulating and rewarding experience (motivational properties of the job). Belief in self-reliance (effort orientation) and the ability to separate out emotions from the workplace (emotional control) were also relatively large contributors.

Generally contributions to variance in performance were smaller than contributions to variance in affective and cognitive motivational outcomes. In addition, fewer perceived organizational and job characteristics had a significant impact on levels of self-assessed performance. Supervisory assessments of employee performance were influenced only by "perceived contextual variables," including perceived co-worker organizational citizenship behavior, worker access to feedback, bureaucratic constraints, and perceived motivational properties of the job. Supervisory ratings of employee performance were influenced by largely by factors that the supervisor could readily observe in the work environment (e.g., citizenship behaviors). In contrast, employee self-ratings of performance were determined by both less readily observable internal factors as well as situational factors.

**Effect of affective and cognitive outcomes on performance:** Examination of the variation in performance explained by how workers think and feel about their work experience indicated that satisfaction and organizational commitment influenced self-assessed performance, but did not explain any variation in performance as assessed by the supervisor.

**Conclusions:** This study on determinants and outcomes of health worker motivation in two Jordanian hospitals is the first of its kind in Jordan. It provides in-depth information about how various factors influence motivational outcomes and highlights some avenues for intervention. Both individual worker differences and perceptions of contextual factors are amenable to organizational intervention: either by changes in hospital management practices or changes in Ministry of Health policies. These include: better job design, improved feedback and communication, clearer standards for performance, reward for good performance, and increased communication with surrounding communities. The results from this study also indicate that differential interventions for various

professional categories may be required to address significant differences in their perceptions and responses to the work environment.

Because of its innovative nature, this research experience also provides some insights into future research methods. More work would be welcome on further refining and adapting some of the scales to the Jordanian context, and performance measures could benefit from differentiation by professional category.

This research in Jordan has indicated that public sector workers in Jordanian hospitals have the desire and aspirations to perform well on the job. However, many organizational and bureaucratic constraints impede workers from doing their job as they might wish and to feel satisfaction with their efforts. The research demonstrated the feasibility of doing this kind of study in the Jordanian environment, and the lively discussions prompted from the dissemination of findings indicates the possibility of making improvements in worker motivation, and ultimately in hospital and health sector performance.



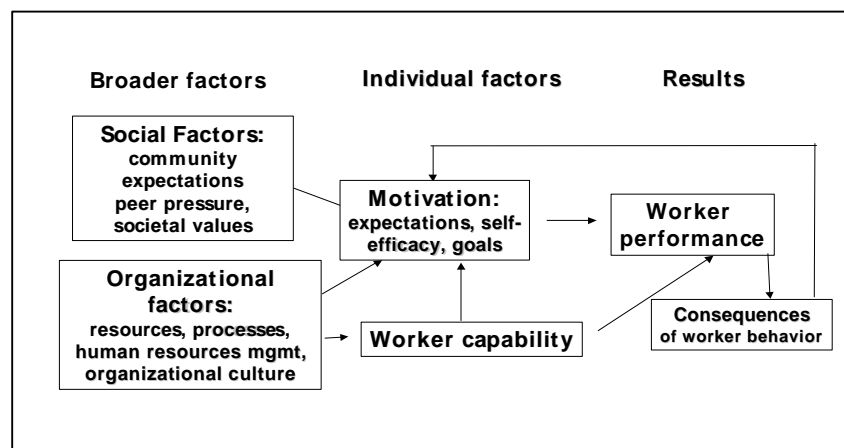
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# 1. Introduction

Work motivation is defined as the individual's degree of willingness to exert and maintain an effort towards organizational goals (Kanfer, 1999), and is often cited as a major constraint to health systems performance in developing and middle-income countries. The Partnerships for Health Reform (PHR)<sup>1</sup> has undertaken this topic for exploratory research, under its major applied research program. Although extensive research has been done on worker motivation in the United States, little has been done in developing countries. Thus, the first phase of PHR's research activities focused on the development of a multi-disciplinary conceptual framework for examining the determinants of health worker motivation and how health sector reforms impact on it (Bennett and Franco, 1999). This framework, see in Figure 1 below, lays out motivational determinants at several levels:

- > Individual level: goals, self-concept, and expectations for consequences of work behavior
- > Work context or organizational level: organizational structure and processes, organizational culture, and human resource management inputs
- > Broad socio-cultural factors: community expectations, peer pressure, societal values

**Figure 1. Determinants of Health Worker Motivation**



Field work on the determinants of health worker motivation is being conducted simultaneously at two research locations: in the Hashemite Kingdom of Jordan and in the Republic of Georgia. The research methodology (Kanfer, 1999) developed to examine these elements has been divided into three segments:

1. A contextual analysis to examine historical, social, and organizational facts that characterize the general working environment

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<sup>1</sup> Funded by the United States Agency for International Development, under contract # HRN-C-00-95-00024.

2. A 360 degree assessment to examine perceptions about the specific work environment held by workers themselves, as well as by supervisors, managers and patients
3. An in-depth analysis to focus on the individual determinants and outcomes of the worker's motivational process

This report presents the methodology and results from the third segment of this research program (the in-depth analysis) as conducted at two public hospitals in Jordan. The goals of this in-depth analysis were to examine how various determinants are associated with outcomes of motivation in the Jordanian context, and to provide a baseline for measuring the effectiveness of further interventions. (see Ghandour et al. [2000] and Franco et al. [2000] for reports on other phases of the research in Jordan).

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## **1.1 Context of the Study**

Jordan is currently in the process of examining possible types of reform to improve health systems performance. This study of health worker motivation contributes to the package of interventions and studies being conducted in Jordan under the auspices of PHR in Jordan. In addition to this health worker motivation study, work is being carried out to study hospital autonomy, national health accounts, and insurance coverage.

This study in Jordan was also carried out in conjunction with PHR/Jordan's research capacity building activities, which has used the health worker motivation study as a field laboratory for Ministry of Health participants and PHR scholars (masters students from Jordanian universities). Research classes and other educational opportunities complemented the field research activities.

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## **1.2 Goals and Objectives of the In-depth Analysis Study**

To date, there has been relatively little research investigating the determinants and outcomes of health care worker motivation in Jordan or in most developing or middle-income countries. The purpose of the in-depth analysis was to assess which determinants seem to most influence the outcomes of the motivational process.

The specific objectives of this descriptive and analytical study were to:

- > Assess the reliability of well-tested psychometric scales when applied in the Jordanian context
- > Compare ratings of various determinants among types of workers (medical staff, nursing staff, allied health professionals, and service/administrative staff) and between hospitals
- > Test associations between various determinants and outcomes of the motivational process

The results of the in-depth analysis will be used, in conjunction with those of the 360 degree assessment and the contextual analysis, to development recommendations for improving health

worker motivation that can be applied at the level of the civil service department, the central Ministry of Health, hospital management, and individual hospital departments.<sup>2</sup>

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### 1.3 Location of the Study

Data for the in-depth analysis, as in the 360 degree assessment, were collected at two public hospitals in Jordan:

- > Al-Basheer hospital: a very large central and teaching hospital in Amman, with 874 beds and more than 1800 employees
- > Al-Ramtha hospital: a small community hospital in rural Northern Jordan, with 56 beds and about 250 employees

These two hospitals were chosen because they represented the range of public hospital settings and circumstances. Comparisons between hospitals were undertaken for the sole purpose of examining how differences in organizational setting might affect worker motivation, not as ratings of the two specific hospitals. Although the results from these two hospitals were not intended to be representative of all other hospitals in Jordan, results from a partial application of the 360 degree assessment methodology done at 12 other government hospitals throughout Jordan showed very little difference from results at the two study hospitals. Such similarities indicate that working conditions and staff perceptions may be similar through the public hospital sector.

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### 1.4 Outline of the Report

Section 2 of this report describes the research methodology, including instrument design, sampling, data collection and analysis. Section 3 presents findings on the overall levels of motivational outcomes. Section 4 discusses the effects of demographic variables (hospital, profession, gender, and age) on motivational determinants and motivational outcomes. Section 5 examines the effects of motivational determinants (individual-level differences and perceived contextual variables) on motivational outcomes, with the goal of understanding key determinants of motivation in Jordanian public hospitals. Section 6 discusses the relationship between various motivational outcome measures. Section 7 discusses the results previously presented, methodological issues relevant for future research, and draws some general conclusions.

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<sup>2</sup> Further information about the recommendations can be found in Franco, June 2000.





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## 2. Methodology

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### 2.1 The Instruments

In contrast to the smaller samples and more qualitative data that were used in the 360 degree assessment, this phase of the research in Jordan focused on larger samples of strictly quantitative data. Three instruments were used to collect data: the individual worker questionnaire (IWQ), the supervisors' assessment of worker performance (SAP), and the secondary data form. Copies of instruments used in the in-depth phase are provided in Annex A.

The IWQ was a self-administered form filled out by hospital workers; it asked about workers' own individual perceptions about themselves and their work environment. The SAP was a self-administered questionnaire filled out by supervisors of those workers in the IWQ sample and contained a performance scale parallel to one in the IWQ. The secondary data form included information on attendance and workload for workers in the sample, and was compiled from hospital records. All three questionnaires included unique identification numbers for each worker, allowing data from the three questionnaires to be merged into a single data file.

The in-depth analysis instruments were based on: well-tested psychometric scales widely used in work motivation research in the United States, previous research on an Islamic work ethic, scales used/developed during the 360 degree assessment, and knowledge of local conditions. Table 1 outlines the major types of information collected.

**Table 1. Sources of Data**

Types of information about motivation	IWQ	SAP	Secondary data
Determinants			
Values	XXX		
Organizational culture/atmosphere	XXX		
Workplace conditions	XXX		
Personality	XXX		
Organizational constraints/obstacles	XXX		
Consequences			
Performance	XXX	XXX	XXX
Affective motivation: satisfaction, Commitment	XXX		
Cognitive motivation: alienation	XXX		

The Individual Worker Questionnaire contained nine sections. The first section asked respondents for **demographic and background information**, which included hospital, profession, age, gender, years of work experience, years at the hospital, and years in current position.

The remainder of the IWQ contained entire well-tested scales (or selected items) for a total of 159 individual items. All scales were rated on a 5-point Likert scale format ranging from strongly disagree (1) to strongly agree (5), with the exception of four scales which used the 1 to 5 format with other criteria.

In sections 2-6 of the questionnaire, participants were asked about their individual perceptions about various determinants of motivation. In section two on **values**, selected items from Abu-Saad's (1998) Islamic work ethic scale and all of Spector's (1988) locus of control scale were used, along with a locally developed scale on perceptions of personal and social consequences of poor performance (shame). The third section, on **organizational culture and atmosphere**, contained Podsakoff et al.'s scale on organizational citizenship behaviors (1997) and three locally developed scales on management and supervisory openness and job pride. The fourth section focused on **workplace conditions**, using Edwards et al. (1999) scale on job characteristics, complemented with selected items from Sims et al. (1976) job characteristics index. It also included Warr et al.'s scale on job preferences (1979), that used 5-point Likert scale format ranging from (1) very unimportant to me to (5) very important to me. The fifth section contained three **personality** scales: Brett and Yoge's generalized self-efficacy (1998), a modified version of Kanfer's motivational skills measure (Kanfer and Ackerman, 2000), and Helmreich and Spence's desire for work achievement scale (1978). The sixth section used two locally developed scales on **organizational constraints/obstacles**: one on lack of physical constraints (resource issues) and one on lack of bureaucratic constraints (processes and standards).

Sections 7-9 of the questionnaire focused on the outcomes of motivation. In the seventh section, participants were asked to assess themselves on an 18-item scale for **performance** specifically created by one of the authors (Kanfer) for the hospital context which used a 5-point Likert scale format ranging from (1) very true of me to (5) not at all true of me. Section eight focused on the **affective consequences of motivation**. Several satisfaction scales were used—Taylor and Bowers (1972), Cammann et al. (1979) and Seashore et al. (1982)—along with Allen and Meyer's organizational commitment scale (1990). Section nine, **cognition consequences of motivation**, contained Aiken and Hage's alienation scale (1966). The satisfaction and alienation scales used a Likert format, ranging from (1) very satisfied to (5) very dissatisfied.

The Supervisory Assessment of Performance used the same 18-item performance scale developed by Kanfer that the workers used to assess themselves. Supervisors were asked to use a 5-point Likert format scale—(1) “very true of this worker” to (5) “not very true of this worker”—to rate each individual worker.

The Secondary Data Form contained information about the number of sick days taken in 1999 and the number of unauthorized absentee days in 1999 for each individual worker (all types). For some workers, various measures of workload were also obtained:

- > Medical staff: number of outpatient visits in the last month, number of inpatient admissions in the last month, and number of surgeries in the last month
- > Nursing staff: average number of patients per day in last month, number of deliveries in the last month

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## 2.2 Sampling Methodology

A primary aim of this study was to provide a large database on determinants and consequences of worker motivation in the hospital setting. Data from three sources were collected on the same group of workers: from the workers themselves, from their supervisors and from hospital records. Sample sizes were developed to be as large as feasible in the two settings, and to allow for statistical analysis, with the goal of reaching 500 workers overall.

**Stratification of the sample:** Within each hospital, four professional categories of workers were sampled:

- > *Medical staff:* specialists, general practitioners, dentists, and residents
- > *Nursing staff:* staff nurses, midwives, and assistant nurses
- > *Allied health professional staff:* laboratory, physical therapy, pharmacy (including pharmacist), anesthesiology, radiology
- > *Administration and services staff:* clerks, storekeeper, operator, servant, guard, driver, statistician

This categorization differs from that used in the 360 degree assessment, because it broke down the “other” category into two separate categories: allied health professionals and service/administrative workers. This separation was based on feedback from interviewers in the 360 degree assessment who reported that these two groups responded differently. This breakdown also corresponds to the Ministry of Health’s categorization of their staff. Results of comparisons by type of worker indicate that such a breakdown was justified, as perceptions of allied health workers were often quite different from those of service/administrative staff (see Section 4).

To ensure that the selected sample for each type of worker was representative of that group of workers at that hospital, each hospital created a list of its workers by professional category. Within these lists, sub-groups were outlined. For example, among the nursing staff, selection was based on type of nursing staff (staff nurse, assistant nurse, or midwife) and on gender. Workers within each sub-group were systematically selected, based on a random start number.

The sampling plan called for a total of 120 workers from each of the four groups at Al-Basheer hospital, and 25 from each group at Al-Ramtha hospital.<sup>3</sup> This represented a 20 percent over-sampling to ensure adequate final sample sizes of at least 100 in each group at Al-Basheer and 20 in each group at Al-Ramtha.

Over-sampling was necessary to compensate for workers on leave, ill, or absent for other reasons. Table 2 shows actual sample sizes reached.

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<sup>3</sup> For Al-Ramtha hospital, these 100 workers in addition to the 32 already interviewed in the 360 degree assessment meant that the study had touched over 50 percent of all hospital staff. It also include 89 percent of all medical staff.

**Table 2: Actual samples for the In-depth Analysis**

Category of sample	Al-Basheer	Al-Ramtha	TOTAL
Individual worker questionnaire	409	99	510
Medical staff	96	24	120
Nursing staff	124	25	149
Allied health professionals	88	25	113
Administrative/services staff	101	25	126
Supervisory performance assessment	409	102	511
Secondary data	459	100	569

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## 2.3 Data Collection Procedures

IWQ and SAP data were collected during group sessions where the questionnaire was introduced by research staff, and then self-administered. Sessions at the two study hospitals were run by seven PHR scholars and nine Ministry of Health research participants, in collaboration with hospital management. Participation in the study was voluntary. Completing the IWQ took workers about 40 minutes for the IWQ; the SAP took supervisors about 5-8 minutes for each individual worker they assessed. At the end of the session, all participants were thanked for their time and assistance. Initial sessions were scheduled and make-up sessions were held for those who were unable to attend the initial sessions. Hospital administrative staff compiled data for the secondary data forms.

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## 2.4 Composite Scale Reliability

Item responses to all sections of the instruments (IWQ and SAP) were quantitatively coded and entered into a combined data file. Reverse-scored items were re-coded. Based on correlations and factor loadings, scales derived from the literature were adjusted to fit the data.<sup>4</sup> A total of 29 scales and sub-scales were developed from the IWQ data. A set of 4 parallel performance subscales, containing identical items as those for the performance scale derived from the IWQ data, were retained from the SAP questionnaire. Annex B presents the individual items retained in each of these scales and sub-scales and discusses scale modification done in the analysis phase.

Table 3 shows the Cronbach alpha scores and the means for each scale or sub-scale in the order they were found in the questionnaire. Cronbach's alpha is a measure of reliability and rates the variability across individual items in a scale and across individuals in the sample. As a reference, correlations among all retained scales can be found in Annex C.

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<sup>4</sup> Only very minor adjustments were made to the well-tested scales. More details on modifications can be found in Annex B.

**Table 3: Reliability of Scales of Determinant and Consequences of Motivation**

Scale	Alpha	Mean
Islamic work ethic:		
Work as a virtue	0.81	4.75
Personal values orientation	0.70	4.56
Personal effort orientation	0.56	3.92
Work locus of control	0.55	2.70
Shame (expectations)	0.72	3.70
Management openness	0.42	3.54
Pride	0.78	3.22
Organizational citizenship	0.85	3.38
Motivational properties	0.77	3.48
Job characteristics:		3.77
Job skill variety	0.70	3.09
Job autonomy	0.67	3.37
Job feedback	0.35	3.65
Job task identify	0.61	
Job preferences	0.62	4.36
Generalized self-efficacy	0.67	3.63
Motivational Skills		
Motivational control	0.63	4.11
Emotional control	0.71	2.98
Desire for work achievement	0.76	4.43
Lack of physical constraints	0.54	2.69
Lack of bureaucratic constraints	0.31	3.37
Self-assessed performance:		
Conscientiousness	0.89	4.40
General work attitude	0.41	3.98
Get along with others	0.83	4.17
Attendance	0.47	4.47
Supervisor-assessed performance:		
Conscientiousness	0.93	4.09
General work attitude	0.67	3.85
Get along with others	0.84	4.39
Attendance	0.82	4.31
Satisfaction:		
General satisfaction	0.73	3.39
Intrinsic satisfaciton	0.86	3.04
Extrinsic satisfaction	0.67	2.37
Organizational commitment	0.91	3.48
Cognitive motivation	0.86	3.09

Generally speaking, most scales showed reliability of 0.70 or greater. This indicates that the constructs measured by these scales seem to hold in the Jordanian public hospital work setting. The cut-off point for reliability is generally 0.70, but, given the exploratory nature of this study, scales with lower values were included in the analysis. In many cases, even with alpha scores below 0.70, significant effects on motivational outcomes were found. Low alpha scores are problematic only when no significant effect is found: in that case, one would not know if the lack of significant effect is real, or is due to the heterogeneity of the predictor variables.

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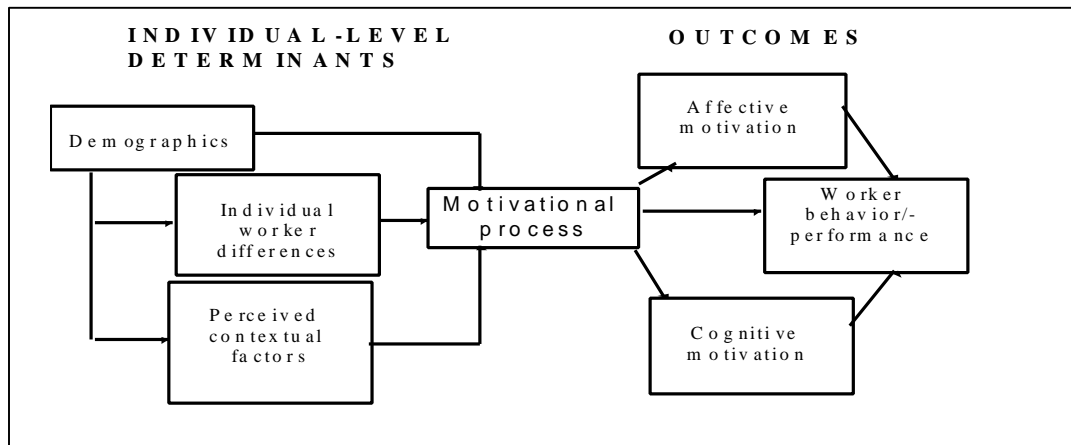
## **2.5 Analysis of Scales**

With the final set of scales established, analyses of variance (followed by the Scedge test) and multiple regression analyses were run. The regressions were designed to investigate how much a series of motivational constructs explained variation in motivational outcomes. A total of 13 motivational outcomes were examined:

- > Affective motivation (4): general job satisfaction, intrinsic satisfaction, extrinsic satisfaction, organizational commitment
- > Cognitive motivation (1)
- > Worker's (self) assessment of performance (4): conscientiousness, general work attitude, getting along with others, attendance
- > Supervisor's assessment of worker performance (4): conscientiousness, general work attitude, getting along with others, attendance

Seven sets of hierarchical (linear) regression models were run, based on initial forced entry of a set of demographic variables: hospital, profession, gender, and age (model 1). A second-level model (model 2) contained a series of determinants entered simultaneously. Membership in these series was based on the conceptual framework in Figure 2. Entering the demographic variables first allowed examination of additional variance explained by the motivational determinants, as calculated by the square of the part correlation values.

**Figure 2. Conceptual Framework for the Analysis of Determinants and Outcomes of Health Worker Motivation**



The seven groupings of the independent variables for the second level regression models were as follows:

***Individual Worker Differences:***

- > *Expectations:* perceived personal consequences of poor performance (shame)
- > *Values/work ethic:* work as a virtue, personal values orientation to work, personal effort orientation to work
- > *Personality factors related to work:* motivational control, self-efficacy, desire for work achievement
- > *Personality factors related to emotions:* emotional control
- > *Individual differences:* job preferences, work locus of control

***Perceived Contextual Factors:***

- > *Organizational culture:* pride, organizational citizenship behavior
- > *Organizational/task characteristics:* feedback, lack of bureaucratic constraints, lack of physical resource constraints, management openness, task identify, skill variety, job autonomy, and motivational job properties

Specific results ( $R^2$ , F statistics, t-values, etc.) of the regressions run on the demographic variables (model 1) can be found in Annex D, while results for seven groupings of motivational determinants can be seen in Annex E. It should also be noted that any significant contribution to motivational outcomes is worth exploring for possible intervention, as large contributions to variance are rare in this type of research where a very complex set of variables are influencing behavior.

The results of these analysis will be presented in the four following sections. Section 3 presents the levels of motivational outcomes, Section 4 will examine the effects of demographics on motivational determinants and outcomes. Section 5 will present the impact of motivational determinants on motivational outcomes. Section 6 will discuss the correlations and effects of affective and cognitive motivational outcomes on performance measures.





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### 3. Motivational Outcomes in the Study Population

This section presents the overall results in terms of motivational outcomes. Outcomes of the motivational process were measured in three groupings: what workers do (behavior or performance); what workers feel (affective motivation); and what workers think (cognitive motivation).

Levels of worker behavior, as reflected in generic measures of worker performance, are presented in Figure 3. Worker performance was represented by four different facets: conscientiousness (good work habits, reliable, timely, high quality work), general work attitude (positive, calm, work fast), getting along with others (working relationships with co-workers and supervisors), and attendance. Figure 3 includes performance ratings from both the perspectives of the worker and his/her supervisor. Ratings of performance were generally high, but there were significant differences between worker and supervisor ratings for each facet and correlations between these two measures were extremely low (see section 5.2.1 for more details).

**Figure 3. Performance Outcomes for the Study Population  
(scale of 1 to 5)**

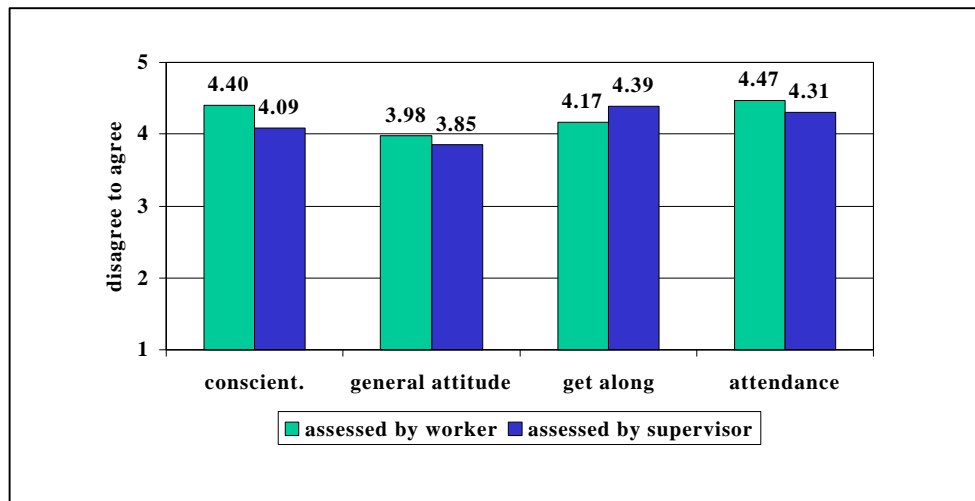
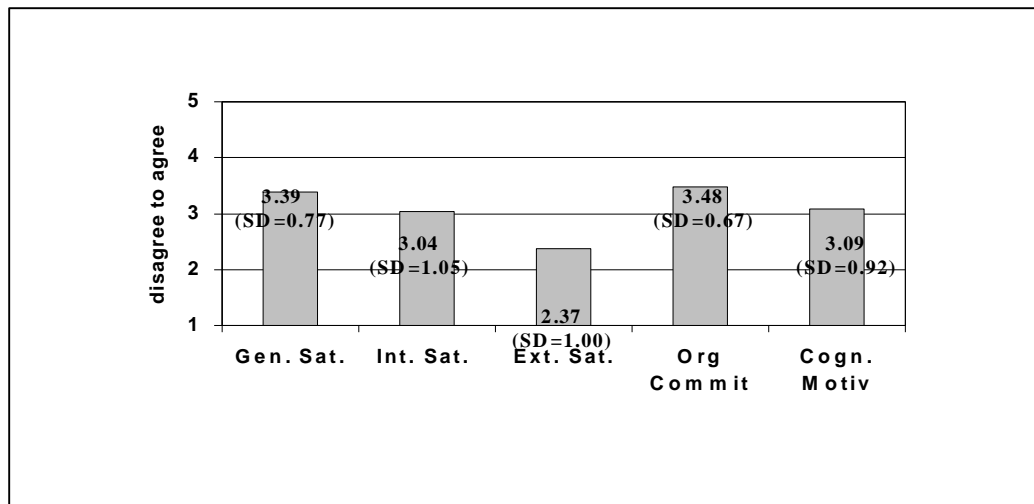


Figure 4 presents the data on affective and cognitive motivational outcomes. Here levels are lower, with hospital workers having only neutral to moderate levels about how they feel and think about their work. Extrinsic satisfaction, a measure of satisfaction with the material benefits and physical conditions of one's job, is quite low. Measures of intrinsic satisfaction (satisfaction deriving from the ability to learn and achieve something on the job) and cognitive motivation (satisfaction with the ability to do one's job and achieve professional expectations) were at a more neutral level. General satisfaction (reflecting satisfaction with co-workers, job itself, pay, and management) and organizational commitment were at more moderate levels.

**Figure 4. Affective and Cognitive Motivational Outcomes in the Study Population  
(scale of 1 to 5)**



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## 4. The Effects of Demographics on Motivational Determinants and Outcomes

This section examines the role of demographic variables—age, sex, work site (hospital), and profession—on levels of motivational determinants and outcomes. It first describes the sample overall, then presents effects on motivational determinants (individual worker differences and perceived contextual variables), and finally on outcomes: performance, affective and cognitive motivation.

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### 4.1 Description of the Sample Population

Table 4 presents the demographic breakdown of the sample by profession and hospital. As seen in the table, medical staff were significantly older and had more years of work experience than other types of staff, while nurses were significantly younger and more likely to be female. These characteristics reflect overall staffing patterns at the two hospitals.

**Table 4: Sample Characteristics**

	Age	Female	Years exp.	Yrs. hospital	Yrs. position
PROFESSION					
Medical staff	43	18%	14	8	6
Nursing staff	30	71%	9	8	7
Allied health prof.	35	31%	12	8	9
Service/admin	35	48%	11	9	8
HOSPITAL					
Al-Basheer	35	47%	12	8	8
Al-Ramtha	37	23%	12	7	7

This sample, compared to the sample from the 360 degree assessment, showed a higher percentage of female workers at Al-Basheer hospital in every category, but most significantly in the nursing category. The average age was similar in both samples, but the number of years in their current position was much longer in this sample (three years in the 360 degree assessment versus seven years in this sample).

Productivity data for medical staff (outpatient visits/month/physician and inpatient admissions/month/physician) indicate few differences in the average workload between the two hospitals, although the high end of the range was higher for Al-Basheer. However, medical staff doing surgeries ( $n = 26$ ) had a significantly higher workload at Al-Basheer (mean = 29/month) than Al-Ramtha (mean = 14/month). For nursing staff, productivity, as measured by the average number of patients assigned per day over the last month, was significantly higher at Al-Basheer: nurses averaged 25 patients a day, while at Al-Ramtha, they managed an average of 12 patients a day.

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## 4.2 Differences in Motivational Determinants by Demographic Groups

The first level of analysis was the investigation of the influence of demographics on motivation determinants and outcomes. The following tables present the effects on demographics on the motivational determinant scales, based on an analysis of variance. Table 5 presents the effect of profession, Table 6 presents the effects of hospital and gender, and Table 7 shows the same for age (divided into quartiles).

The results presented in Table 5 indicate that there are many differences in perceptions among professional groups. Profession had a more pervasive influence on perceptions of the work context than on individual worker differences. Results of the Scheffe test indicate that for individual worker differences scales, medical staff had a significantly higher values work orientation than other staff, while nursing staff had significantly lower self-efficacy than medical or service/administrative staff. Significant differences in desire for work achievement between medical and nursing staff were also detected.

Many perceived contextual variables showed significant differences. For perceived management openness, job task identify, and job autonomy, nursing and allied health profession staff perceptions were significantly more negative than the other groups. Medical staff had significantly higher perceived skill variety in their job, and motivational job properties overall. Nursing staff exhibited the lowest pride in their organization of all professional groups. For perceived lack of bureaucratic constraints, significant differences in perceptions were found between nursing staff (high) and medical staff (low), while for lack of physical constraints, differences were between nursing staff (low) and service/administrative staff (high).

**Table 5: Means of Determinant variables by Profession**  
(minimum value = 1 ; maximum value = 5)

SCALES	Medical staff	Nursing staff	Allied health	Service/ admin	P
INDIVIDUAL DIFFERENCES					
Work as a virtue	4.80	4.74	4.79	4.68	--
Values work orientation	4.72	4.52	4.49	4.54	0.000
Effort orientation	3.96	3.97	3.75	4.02	--
Work locus of control	2.71	2.70	2.77	2.64	--
Personal/social consequences	3.82	3.61	3.76	3.60	--
Self-efficacy	3.78	3.46	3.61	3.72	0.000
Motivational control	4.17	4.11	4.10	4.08	--
Emotional control	2.85	3.05	3.04	2.96	--
Job preferences	4.42	4.41	4.34	4.30	--
Desire for work achievement	4.55	4.38	4.42	4.40	0.05
PERCEIVED CONTEXTUAL VARIABLES					
Pride	3.45	2.89	3.23	3.37	0.000
Organizational citizen. behavior	3.52	3.26	3.44	3.35	--
Motivational job properties	3.71	3.37	3.38	3.49	0.000
Lack of bureacratic constraints	3.21	3.56	3.42	3.25	0.000
Lack of physical constraints	2.67	2.57	2.65	2.91	0.05
Management openness	3.73	3.38	3.44	3.68	0.000
Job feedback	3.46	3.27	3.40	3.35	--
Job task identify	3.80	3.45	3.54	.3.86	0.000
Job skill variety	4.16	3.72	3.69	3.51	0.000
Job autonomy	3.21	2.90	2.86	3.43	0.000

Table 6 shows the same determinants by hospital and gender. The results indicate that the individual differences among workers are pretty consistent between the two hospitals, as are the job characteristics. Significant differences between hospitals can be attributed to a certain extent to the type of hospital (large teaching hospital versus small community hospital), pride (closeness to the community), management openness (related to distance between worker and management), and bureaucratic and resource constraints. Gender, on the other hand, showed significant differences throughout. Female employees always rated themselves and their environment lower than their male counterparts, with the only exceptions being work locus of control, emotional control, and bureaucratic constraints.

**Table 6: Means of Determinant Variables by Hospital and Gender**  
(minimum value = 1 ; maximum value = 5)

SCALES	Al-Basheer	Al-Ramtha	P	Male	Female	P
INDIVIDUAL DIFFERENCES						
Work as a virtue	4.74	4.80	--	4.79	4.69	0.020
Values work orientation	4.56	4.59	--	4.64	4.47	0.000
Effort orientation	3.91	4.01	--	3.94	3.92	--
Work locus of control	2.70	2.68	--	2.66	2.76	0.041
Personal/social consequences	3.69	3.71	--	3.75	3.61	0.013
Self-efficacy	3.61	3.72	--	3.78	3.44	0.000
Motivational control	4.12	4.09	--	4.15	4.06	0.020
Emotional control	3.02	2.81	--	2.90	3.08	0.036
Job preferences	4.38	4.33	--	4.36	4.36	--
Desire for work achievement	4.43	4.43	--	4.49	4.35	0.001
PERCEIVED CONTEXTUAL VARIABLES						
Pride	3.14	3.56	0.000	3.40	2.98	0.000
Organizational citizen. behavior	3.37	3.45	--	3.50	3.23	0.000
Motivational job properties	3.48	3.51	--	3.56	3.38	0.001
Lack of bureaucratic constraints	3.44	3.06	0.002	3.29	3.48	0.007
Lack of physical constraints	2.65	2.87	0.05	2.71	2.67	--
Management openness	3.50	3.76	0.000	3.64	3.42	0.002
Job feedback	3.35	3.43	--	3.45	3.25	0.001
Job task identify	3.64	3.69	--	3.68	3.62	--
Job skill variety	3.78	3.71	--	3.91	3.56	0.000
Job autonomy	3.09	3.16	--	3.12	3.06	--

Females are heavily represented in the nursing (71 percent) and service/administrative (48 percent) staff groups. Examination of differences in perceptions between males and females among these two groups (excluding medical and allied health professional staff) showed that many of these differences hold (and the same direction): values work orientation, work locus of control, self-efficacy, pride, organizational citizenship behavior, management openness, job task identify, and job skill variety.

Differences by age, shown in Table 7, indicate that when differences occur among age groups, younger workers view themselves and their work environment more negatively than older workers do. The only exceptions were perceptions of bureaucratic constraints, which was seen as less of a problem for younger workers, and work locus of control, where workers over 40 years of age had less feeling of individual control over their work experience. Again, as with gender, hospital, and profession, there were fewer differences among variables reflecting individual differences than for perceived contextual variables.

**Table 7: Means of Determinant Variables by Age Group (quartiles)**  
(minimum value = 1 ; maximum value = 5)

SCALES	< 30 yrs	30-34 yrs	35-39 yrs	>=40 yrs	P
INDIVIDUAL DIFFERENCES					
Work as a virtue	4.74	4.70	4.77	4.79	--
Values work orientation	4.50	4.53	4.54	4.67	0.003
Effort orientation	3.91	3.88	3.88	4.04	--
Work locus of control	2.77	2.71	2.76	2.57	0.010
Personal/social consequences	3.70	3.72	3.65	3.69	--
Self-efficacy	3.29	3.59	3.68	3.94	0.000
Motivational control	4.06	4.11	4.09	4.19	--
Emotional control	3.02	3.01	3.01	2.87	--
Job preferences	4.38	4.41	4.32	4.36	--
Desire for work achievement	4.34	4.44	4.43	4.52	0.013
PERCEIVED CONTEXTUAL VARIABLES					
Pride	2.82	3.07	3.38	3.57	0.000
Organizational citizen. behavior	3.14	3.36	3.46	3.54	0.000
Motivational job properties	3.29	3.41	3.50	3.71	0.000
Lack of bureacratic constraints	3.47	3.56	3.26	3.21	0.001
Lack of Physical constraints	2.56	2.55	2.80	2.84	0.017
Management openness	3.34	3.38	3.62	3.83	0.000
Job feedback	3.27	3.30	3.39	3.49	0.05
Job task identify	3.51	3.59	3.66	3.83	0.005
Job skill variety	3.50	3.72	3.71	4.09	0.000
Job autonomy	2.82	3.09	3.04	3.40	0.000

One interesting note is that two scales, both measuring individual differences, showed almost no variation among any of the demographic groupings: job preferences and desire for work achievement. Job preferences reflect the desire, in the work context, for autonomy, achievement, feedback, being able to do a complete job, and doing something worthwhile. Job preferences exhibited no significant differences across profession, age, gender, or hospital. The desire for work achievement indicates one's aspiration to do a good job, improve one's work performance and work hard. Worker ratings were also fairly stable across all demographic categories, with the exception of desire for work achievement, where medical staff were significantly higher than other staff, higher for men than women, and lowest in workers less than 30 years old.

### 4.3 The Effect of Demographic Variables on Motivational Outcomes

In addition to their effects of the demographic variables on motivational determinants, this research also examined their effects on the various measures of motivational outcomes: performance, affective and cognitive motivation. To do so, the demographic variables were entered simultaneously (forced entry) into the linear regression model. Table 8 shows the percentage variance<sup>5</sup> for the 13

<sup>5</sup> The percentage variance is calculated as the square of the part correlation resulting from the linear hierarchical regression analysis.

motivational outcome variables that could be accounted for by the demographic variables. Specific regression results can be found in Annex D, Table A4-1.

**Table 8: Variance Accounted for by Demographic Variables Entered as a Single Model**

Dependent Variables	Hospital	Profession	Gender	Age
Self-assessed performance				
Conscientiousness	--	1.3%	--	--
General work attitude	0.8%	0.9%	1.7%	--
Get along with others	--	0.8%	--	2.9%
Attendance	--	--	--	--
Supervisory-assessed performance				
Conscientiousness	3.6%	1.8%	--	--
General work attitude	4.4%	--	--	--
Get along with others	--	--	--	--
Attendance	--	--	--	--
Satisfaction				
General job satisfaction	1.7%	1.1%	0.7%	4.1%
Intrinsic satisfaction	--	1.4%	--	3.0%
Extrinsic satisfaction	--	1.3%	--	2.6%
Organizational commitment	--	2.7%	4.7%	5.2%
Cognitive motivation	--	1.0%	--	6.4%

Note: no significant effect on motivational outcomes

Type of hospital, as a factor, had relatively few effects on motivational outcomes. This coincides with results from the 360 degree assessment that also indicated few differences between hospitals, and may indicate that results from this study reflect issues with public hospital sector workers in general. Where differences between hospitals were present, ratings from Al-Ramtha, the small, community hospital, were higher than ratings at Al-Basheer, the central hospital. Differences related to gender were few, and gender itself was significantly correlated with age, profession, and hospital. Profession and age contributed to the variance in almost all motivational outcome measures, with profession contributing to more of the (self- and supervisory-assessed) performance measures. Tables 9 and 10 present analysis of variance results for these motivational outcomes by various demographic variables.



**Table 9: Means of Outcome Variables by Profession**  
(minimum value = 1 ; maximum value = 5)

SCALES	Medical staff	Nursing staff	Allied health	Service/ admin	P
IWQ – Conscientiousness	4.37	4.35	4.40	4.51	--
SAP – Conscientiousness	4.09	3.95	4.04	4.30	0.000
IWQ – General work attitude	4.01	3.87	4.02	4.06	0.040
SAP – General work attitude	3.92	3.80	3.71	3.98	0.009
IWQ – Get along with others	4.33	3.97	4.06	4.39	0.000
SAP– Get along with others	4.43	4.36	4.18	4.62	0.000
IWQ – Attendance	4.55	4.41	4.52	4.43	--
SAP – Attendance	4.36	4.25	4.18	4.44	--
General job satisfaction	3.50	3.24	3.27	3.58	0.000
Intrinsic satisfaction	3.01	2.99	2.80	3.32	0.002
Extrinsic satisfacion	2.41	2.30	2.06	2.69	0.000
Organizational commitment	3.63	3.22	3.48	3.66	0.000
Cognitive motivation	3.30	2.87	2.87	3.33	0.000

For motivational outcomes that demonstrated significant differences between professional categories, nursing staff, allied health professional staff or both reported lower levels of performance, and affective and cognitive motivation ratings. Service and administrative workers tended to rate their own motivational outcomes at levels similar to those of medical staff. Results of the Scheffe test highlighted the following specific results. In terms of performance, nursing and allied health professional staff rated themselves significantly lower on getting along with others. For supervisory-rated conscientiousness, general work attitude, and getting along with others, service/administrative staff were rated higher than nursing or allied health staff. For general job satisfaction, and cognitive motivation, both nursing and allied health professionals were significantly lower than medical and service/administrative staff, while nursing staff alone was lower on organizational commitment. Significant differences for intrinsic satisfaction were also seen between service/ administrative workers (high) and allied health professionals (low).

Table 10 presents differences by hospital, age, and gender on motivational outcomes.

**Table 10: Means of Outcome Variables by Hospital, Age, and Gender**  
**(where differences were significant at  $p \geq 0.05$ )**  
**(minimum value = 1 ; maximum value = 5)**

SCALES	Hospital		Age		Gender	
	Al-Bash.	Al-Ram.	<35	35+	Male	Fem
IWQ – Conscientiousness	--	--	--	--	--	--
SAP – Conscientiousness	4.02	4.39	--	--	4.14	4.01
IWQ – General work attitude	3.95	4.12	3.93	4.04	4.07	3.87
SAP – General work attitude	3.78	4.15	--	--	--	--
IWQ – Get along with others	--	--	4.04	4.28	4.25	4.07
SAP – Get along with others	4.36	4.53	--	--	--	--
IWQ – Attendance	--	--	--	--	--	--
SAP – Attendance	4.27	4.47	--	--	--	--
General job satisfaction	3.32	3.66	3.25	3.53	3.51	3.23
Intrinsic satisfaction	--	--	2.90	3.15	--	--
Extrinsic satisfaciton	--	--	2.25	2.48	--	--
Organizational commitment	--	--	3.30	3.65	3.65	3.26
Cognitive motivation	--	--	2.90	3.27	3.20	2.94

Note: -- = means no significant differences.

Differences between hospitals were found mainly for performance measures, where workers and supervisors at Al-Ramtha rated themselves higher than those at Al-Basheer. Differences among age groups were clustered in the affective and cognitive outcomes, with older employees being more likely to report positive motivational outcomes. For gender, scattered differences were found, and where differences exist, men consistently report higher motivational outcomes than women. Again, an examination of gender differences in those professional categories where females are highly represented indicated that many of these gender differences are not related to profession. All motivational outcomes showing gender differences in the sample overall were also found in the sub-sample of nursing and service/administrative staff, with the exception of workers' self assessment of getting along with others—here an overall difference was seen, but not in the sub-sample. In addition, the supervisors' assessment of getting along with others and attendance also displayed differences by gender, with males rating higher than females.

An additional performance measure of worker attendance was derived from hospital records, which compiled the number of sick days taken in 1999.<sup>6</sup> Number of sick days reflects actual physical health status on an individual level, but, as a population measure, it is also reflective of work commitment, satisfaction, etc. (Steers and Rhodes, 1978; Eisenberger et al., 1990). Twenty-eight percent of staff took at least one sick day during 1999 for the sample overall (n=509). Significantly more staff at Al-Basheer took sick leave (31 percent) than staff at Al-Ramtha (16 percent). Medical staff overall were generally less likely to take sick leave than other types of staff (18 percent versus 34 percent for nurses, 27 percent for allied health professionals, and 32 percent for

<sup>6</sup> Another attendance measure had also been compiled: unexplained absences. However, these were rarely recorded and these data were not analyzed further.

service/administrative staff). Female employees were also more likely to take sick leave (36 percent) than male employees (22 percent).



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## 5. Influence of Motivational Determinants on Motivational Outcomes

This section explores the extent to which differences in motivational determinants, such as individual worker differences and differences in their perceptions of the organizational context, influence motivational outcomes. Models were constructed using the conceptual framework presented in Figure 2. Seven different overall models were estimated, each one representing a psychological construct relevant to the study of work motivation, as described in section 2.5. These seven models fall into two broad categories: individual worker differences and perceived contextual differences. Individual worker differences included: expectations, values, worker-related and emotional personality traits, and individual differences. Perceived contextual differences included organizational culture and organizational/task characteristics. Annex E contains the specific results for all regression models ( $R^2$ , adjusted  $R^2$ , change in  $R^2$ , significance of the change in  $R^2$ , t-statistics and p values for individual determinants within the construct).

To facilitate presentation, the effects will be examined first for affective and cognitive outcomes, then for performance outcomes.

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### 5.1 Influence of Motivational Determinants on Affective and Cognitive Outcomes

Affective outcomes represent the emotional response (feelings) resulting from the motivational processes, while cognitive outcomes represent the rational response (thoughts). Table 11 presents the percentage variance explained by these individual and contextual predictors for affective (satisfaction and commitment) and cognitive motivational outcomes, in addition to variance explained by the demographic variables of hospital, profession, gender, and age.

**Table 11: Percentage variance in Affective and Cognitive Outcomes, Accounted for by Independent Variables Making Significant Contributions (beyond demographic variables)**

Determinants	General job satisfaction	Instinsic satisfaction	Extrinsic satisfaction	Affective commitmnt	Cognitive motivation
Individual Differences					
Expectations					
Personal/social conseq.	--	--	--	--	--
Values/work ethic					
Work as a virtue	--	--	--	--	--
Values work orientation	--	--	--	1.4%	--
Effort orientation	1.7%	3.6%	4.4%	3.1%	3.5%
Work-related personality					
Motivational control	--	--	--	--	--
Self-efficacy	11.8%	5.6%	7.4%	8.6%	10.2%
Desire for achievement	--	--	--	--	--
Emotional personality					
Emotional control	4.1%	--	--	2.3%	1.0%
Individual differences					
Job preferences	--	--	--	--	--
Work locus control	10.6%	0.8%	7.2%	9.2%	0.8%
Perceived Contextual Variables					
Organizational culture:					
Pride	6.5%	7.5%	9.6%	18.5%	14.7%
Organ. citizen. behavior	7.2%	2.9%	1.2%	--	1.2%
Organizational/Task characteristics:					
Management openness	1.6%	--	--	1.7%	0.6%
Motivational properties	5.6%	7.0%	6.2%	5.7%	5.6%
Autonomy	--	--	--	--	0.5%
Task identity	--	--	--	0.9%	--
Feedback	--	--	--	--	--
No physical constraint	1.5%	3.3%	7.8%	1.8%	3.4%
No bureaucratic con.	0.6%	1.3%	--	--	1.0%

Note: -- means no significant effect on motivational outcomes

How people feel and think about their work was influenced by every construct, with the exception of expectation of personal and social consequences of poor performance. Stronger influences came from the organizational culture measures of pride in work and organization, and organizational citizenship behavior. In impact, these were followed by confidence in one's ability to do the job (self-efficacy), the feeling of having some control over their work lives (work locus of control), and ability of their job to provide a stimulating and rewarding experience (motivational properties of the job). Belief in self-reliance (effort orientation) and the ability to separate out emotions from the workplace (emotional control) were also relatively large contributors.

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## 5.2 Influence of Motivational Determinants on Performance

Measurement of performance was derived from three sources: workers assessment of their performance, supervisors' assessment of worker performance, and attendance records. The worker self-assessment of performance and the supervisors' assessment of worker performance were based on an identical list of 18 items. Analysis of this performance scale revealed four sub-scales: conscientious work behavior, general work attitude, getting along with others, and attendance. Alpha values for the scales constructed from the supervisor data were higher than those from the worker data (see Table 3), with supervisory alpha values ranging from 0.67-0.93 while alphas for the self-assessed scales ranged from 0.41-0.89. However, general work attitude and attendance among the worker assessed scale, whose alpha values were 0.41 and 0.47 respectively, still were significantly influenced by motivational determinants (see section 5.2.2 and 5.2.3). A corollary study by one of the PHR scholars compared the results from this performance scale with another well-tested performance scale (Lynch et al., 1999): these results validated the 18-item scale used in this study (Fatah et al., 2000).

Because the worker and supervisor assessments were parallel and measured on the same individuals, analysis of the similarities and/or differences between these two sources will be presented first, in section 5.2.1. This will be followed by a separate presentation of the effects of motivational determinants on each of these measures in sections 5.2.2. and 5.2.3.

### 5.2.1 Comparison of Self-assessed and Supervisory-assessed Performance

Even though measurement of performance from the perspective of the worker and from the perspective of the supervisor used the same items, they actually measure different constructs. Worker self-assessment of performance measures how workers perceive themselves and is influenced by other individual-level variables. Supervisory assessment of performance, on the other hand, measures how the organization (as seen through the eyes of the supervisor) perceives the efforts of that worker.

Comparison of parallel scales showed significant differences between worker perceptions of performance and those of their supervisors for all four sub-scales, with t-tests of the differences being highly significant ( $P < 0.000$ ). In addition, correlations between the two sources were extremely low, ranging from 0.006 to 0.020. Although differences between these two sources of data were to be expected, the extent of the difference was larger than anticipated.

Sources of variation were further explored by examining the differences between ratings by workers and supervisors on an individual worker. Differences<sup>7</sup> ranged from 0 to 4.50 (with a 1 to 5 scale), with mean differences ranging from 0.70 to 0.86.

These results were further analyzed by hospital, profession, and gender. Table 12 presents the average differences in scores on any individual worker and statistically significant results among the demographic characteristics of the study population. These demographic characteristics did not provide any explanation for the large differences in general attitude and attendance. However, mean differences between supervisor and worker assessment of conscientiousness were significantly larger at Al-Basheer than at Al-Ramtha. Mean differences varied by profession for assessment of getting

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<sup>7</sup> The difference was calculated as the absolute value of (IWQ rating – SAP rating) for each component: conscientiousness, general attitude, getting along with others, and attendance.

along, with differences for nursing staff being significantly larger than for medical staff and administrative/service workers. Administrative/service workers had significantly smaller differences than allied health professional staff as well. Finally, female workers experienced larger gaps with perceptions of their supervisors for getting along with others and attendance.

**Table 12: Explanatory Factors for Differences between Supervisory- and Self-assessed Performance**

	Mean difference between supervisory- and self-assessed performance			
	Conscientiousness	General attitude	Getting along	Attendance
Average difference	0.74 (worker better)	0.70 (worker better)	0.86 (superv. Better)	0.82 (worker better)
Hospital:				
Al-Basheer	0.78	--	--	--
Al-Ramtha	0.57			
Profession:				
Medical staff			0.78	
Nursing staff	--	--	1.05	--
Allied health			0.92	
Service/adm			0.65	
Gender:				
Male	--	--	0.80	0.74
Female			0.93	0.94

### 5.2.2 Contributions of Motivational Determinants to Worker-assessed Performance

Table 13 presents the percentage of variance in levels of self-assessed performance accounted for by the various individual and contextual constructs. As with affective and cognitive motivational outcomes, many motivational determinants made significant contributions to variance in self-assessed worker performance. Generally contributions to variance in performance were smaller than contributions to variance in affective and cognitive motivational outcomes. In addition, fewer perceived organizational and job characteristics had a significant impact on levels of self-assessed performance. It should be noted that job preferences, which had no significant effect on affective and cognitive motivation, affected all four measures of self-assessed performance.



**Table 13: Percentage Variance in Worker (Self-)assessment of Performance, Accounted for by Independent Variables Making Significant Contributions (beyond demographic variables)**

Determinants	Self-Assessed Measures of Performance			
	Conscientiousness	General work attitude	Get along with others	Attendance
Individual Differences				
Expectations				
Personal/social conseq.	--	--	--	--
Values/work ethic				
Work as a virtue	--	--	--	--
Values work orientation	3.2%	1.1%	--	1.8%
Effort orientation	3.4%	--	1.0%	--
Work-related personality				
Motivational control	4.8%	2.5%	--	0.9%
Self-efficacy	--	--	2.0%	--
Desire for achievement	--	--	--	--
Emotional personality				
Emotional control	2.6%	8.1%	1.8%	1.7%
Individual differences:				
Job preferences	4.4%	1.0%	1.4%	3.9%
Work locus control	--	0.9%	1.1%	--
Perceived Contextual Variables				
Organizational culture:				
Pride	--	--	0.9%	--
Organ. citizen. behavior	0.7%	1.3%	3.9%	1.4%
Organizational/Task characteristics:				
Management openness	--	--	1.0%	--
Motivational properties	--	--	1.0%	0.9%
Autonomy	--	--	--	--
Task identity	--	1.4%	0.8%	--
Feedback	--	--	--	--
No physical constraints	--	--	--	--
No bureaucratic constraints	--	--	2.5%	--

Note: -- means no significant effect on motivational outcomes

### 5.2.3 Contributions of Motivational Determinants to Performance as Assessed by the Supervisor

Table 14 presents the analysis of contributions to variation for supervisory assessments of employee performance. Not surprisingly, supervisory assessments of employee performance were influenced by “perceived contextual variables,” including perceived co-worker organizational citizenship behavior, worker access to feedback, bureaucratic constraints, and perceived motivational properties of the job. That is, supervisory ratings of employee performance were influenced by largely by factors that the supervisor could readily observe in the work environment (e.g., citizenship

behaviors). In contrast, employee self-ratings of performance were determined by both less readily observable internal factors as well as situational factors.

**Table 14: Percentage Variance in Performance as Assessed by the Supervisor, Accounted for by Independent Variables Making Significant Contributions (beyond demographic variables)**

Independent variables	Supervisory-Assessed Measures of Performance			
	Conscientious- ness	General work attitude	Get along with others	Attendance
Individual Differences				
Expectations				
Personal/social conseq.	--	--	--	--
Value/work ethic:				
Work as a virtue	--	--	--	--
Values work orientation	--	--	--	--
Achievement rientation	--	--	--	--
Work-related personality				
Motivational control	--	--	--	--
Self-efficacy	--	--	--	--
Achievement	--	--	--	--
Emotional personality				
Emotional control	--	--	--	--
Individual differences:				
Job preferences	--	--	--	--
Work locus control	--	--	--	--
Perceived Contextual Differences				
Organizational culture:				
Pride	--	--	--	--
Organ. citizen. behavior	0.9%	1.0%	1.0%	--
Organizational/Task characteristics:				
Management openness	--	--	--	--
Motivational properties	1.0%	0.8%	--	--
Autonomy	--	--	--	--
Task identity	--	--	--	--
Feedback	1.1%	--	--	--
No physical constraints	--	--	--	--
No bureaucratic constraints	--	--	--	1.0%

Note: -- means no significant effect on motivational outcomes

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## 6. The Effect of Affective and Cognitive Outcomes on Performance

The conceptualization of outcomes of the motivational process, as illustrated in Figure 2, depicts affective and cognitive motivation, not only as outcomes in and of themselves, but also as determinants influencing worker performance. In other words, job satisfaction and increased organizational commitment should also contribute to an individual's willingness to exert and maintain an effort towards organizational goals. From an organizational point of view, it is worker performance, not satisfaction or commitment, that is most directly linked to achievement of organizational objectives and goals. Thus, further analyses were conducted to examine the influence of affective and cognitive motivational outcomes on performance.

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### 6.1 Effect of Affective and Cognitive Outcomes on Workers' and Supervisor's Assessment of Performance

Using the same kinds of hierarchical regression modeling as before, affective and cognitive outcome variables were entered simultaneously as model 2, following an initial model containing the demographic variables of hospital, profession, gender, and age. Table 15 shows the percentage variance in performance explained by affective and cognitive outcomes. For worker assessment of performance, effects were seen for all outcomes except cognitive motivation. These results indicate that levels of satisfaction and organizational commitment do explain levels of performance when assessed by the worker him/herself, and are positively correlated with performance. However, only general job satisfaction accounted for any variance in supervisor perceptions of worker conscientiousness.

**Table 15: Percentage Variance in Performance, Accounted for by Affective and Cognitive Motivational Measures (beyond demographic variables)**

	Worker assessment of performance				Supervisor assessment of worker performance			
	Conscientious	Attitude	Get along	Attendance	Conscientious	Attitude	Get along	Attendance
General job satisfaction	--	--	2.6%	0.9%	0.7%	--	--	--
Intrinsic satisfaction	0.9%	--	--	--	--	--	--	--
Extrinsic satisfaction	1.0%	1.4%	--	0.9%	--	--	--	--
Organ. Commitment	1.2%	3.0%	0.8%	--	--	--	--	--
Cognitive motivation	--	--	--	--	--	--	--	--

Note: -- means no significant effect on motivational outcomes

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## 6.2 Association of Affective and Cognitive Outcomes with Attendance as Measured by Number of Sick Days Taken

In addition to the supervisor's assessment of performance, analyses of variance were conducted using data on sick days compiled from attendance records. The number of sick days was coded into "no sick days" or "one or more sick days" for the previous year. Significant results are shown in Table 16. Both general job satisfaction and cognitive motivation were negatively associated with taking any sick days: i.e., those having taken any sick days were more likely to have lower job satisfaction and lower cognitive motivation. Intrinsic and extrinsic satisfaction, and organizational commitment were not associated with taking sick days.

**Table 16: Average Rating of Affective/Cognitive Outcomes in Relation to Sick Days Taken in 1999**  
(n = 505 employees)

	No sick days	1+ sick days	P
Job satisfaction	3.34	3.26	0.012
Cognitive motivation	3.15	2.93	0.020

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## 7. Conclusions

This study on determinants and outcomes of health worker motivation in two Jordanian hospitals is the first of its kind in Jordan. It has provided in-depth information about how various factors influence motivational outcomes and highlights some avenues for intervention. Because of its innovative nature, this research experience also provides some insights into future research methods.

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### 7.1 Discussion of Findings

#### 7.1.1 Key Determinants of Worker Motivation and Possible Interventions

The results from this study showed that motivational outcomes were influenced by both the workers' individual differences and by their perceptions of the work environment/context. Prominent motivational determinants reflecting individual differences included feelings of confidence in ability to do one's job (self-efficacy), degree to which one feeling one's work achievements are due to one's efforts or external forces (work locus of control), and conception that success at work is based on self-reliance and meeting commitments (effort orientation). In addition, the ability to separate out one's emotional state from getting the job done (emotional control) and the ability to keep one's self on task (motivational control) also affected motivational outcomes, particularly the measures of performance. A preference for jobs that provide autonomy, feedback, and achievement were also associated with higher performance ratings.

Perceived contextual variables included: pride in the organization, organizational citizenship behavior of co-workers, perception that one's job allowed for achievement, challenges, advancement and security (motivational job properties), perception that one can say what one thinks to management (management openness), and lack of bureaucratic and resource constraints. These determinants were prominent in their influence of motivational outcomes, regardless of the outcome measure used. Table 17 summarizes significant influences of these determinants for the various groupings of motivational outcomes.

**Table 17: Prominent Determinants of Motivational Outcomes**

Type of determinant	Affective	Cognitive	Perform.
Individual worker differences			
Self-efficacy	XX	XX	
Effort orientation	XX	XX	XX
Work locus of control	XX	XX	XX
Emotional control	XX	XX	XX
Motivational control			XX
Job preferences			XX
Perceived contextual factors			
Organizational citizenship behavior	XX	XX	XX
Motivational job properties	XX	XX	XX
Bureacracy	XX	XX	XX
Resources	XX	XX	
Pride	XX	XX	
Management openness	XX	XX	

These findings have implications for policymakers and managers. Perceptions of contextual variables are certainly more easily addressed by hospital management and Ministry of Health policies, but even many individual worker differences can be influenced by organizational interventions. Both areas of intervention will be discussed below.

#### **7.1.1.1 Individual Worker Differences that Can Be Influenced by Organizational Changes**

Determinants categorized as individual worker differences reflect aspects of an individual worker's personality, values, expectations, and preferences. Although these differences are shaped by social conditioning and individual make-up, organizations can influence how these play out in the workplace. For example, self-efficacy, which was one of the bigger contributors to affective and cognitive motivational outcomes, is an individual trait. Self-efficacy, or the confidence an individual has to accomplish the tasks of his/her job, can quite effectively be influenced by organizational interventions. A feeling of self-efficacy is determined, at least in part, by having adequate knowledge and skill to carry out the job, by knowing when a job has been well performed, and by having a clear idea about expectations for good performance. Hospital management can thus increase worker self-efficacy by providing adequate in-service training, ensuring effective mechanisms for providing feedback so that workers know when they are doing a good job (as well as instruction on how to do better if they are not), and ensuring that task assignments and standards for tasks are clear to workers. On the policy level, better selection and deployment can ensure that workers come into the job having the skills they need to complete it, while better training policies can ensure that pre-service and in-service training focus on skills needed in the actual job.

Work locus of control, or the degree to which workers see the external environment determining their advancement and assignments, negatively impacts on job satisfaction, organizational commitment, and self-assessed performance measures. Perceptions of control are heavily influenced by the social context, by religion, and by experience. Implementing policies that allow for more just distribution of benefits, such as promotions or training opportunities, can ameliorate the feeling of

lack of control in the work environment. Clarity in communication about decisions from hospital management can also positively affect a sense of control in the work setting.

Personal effort orientation to work, a reflection of work ethic that focuses on self-reliance and getting work finished, can be enhanced by reinforcing these values through performance assessment and rewards, through more alignment between organizational and worker goals, and recognition for work well done.

Emotional and motivational control are personality traits and reflect one's ability to stay focused on what needs to be done. While these traits may be less amenable to organizational interventions, more effective supervision and mentoring could assist workers in staying focused.

#### **7.1.1.2 Improving Perceptions of the Organizational Context**

Many of the contextual variables that affect affective and cognitive motivation as well as performance are susceptible to organizational intervention.

Pride in working at a specific institution is derived from the work done there and the institution's reputation in the community. Pride had a large impact on affective and cognitive motivation. There are many possible ways to increase worker pride, although they would need to be developed within the Jordanian context. Some possibilities might include: recognizing contributions of individual workers for their contributions, developing stronger relations and communications with the surrounding communities, and creating opportunities for community recognition of hospital (and individual or team) efforts.

Organizational citizenship behavior, a reflection of co-worker team effort and orientation, impacted on affective and cognitive motivation, but also on worker- and supervisory-assessed performance. Increasing such behavior can be achieved through rewarding workers and teams for such behaviors through recognition, feedback, and other such interventions, and by placing more emphasis on building skills in this area.

Motivational properties of the job influenced positively all affective and cognitive motivational outcomes as well as many of the performance sub-scales. These motivational properties include challenge, stimulation, feedback, autonomy, achievement, and job variety. These findings are in line with previous research findings in Saudi Arabia that linked job variety, task identification, and feedback to job satisfaction (Badawy and Essawy, 1992). As job descriptions are in development now in the Ministry of Health, this would be a good time to look at the components of those jobs in order to enhance these motivational properties.

Finally, management openness and removing bureaucratic constraints can also enhance motivation. The perception of management openness can be increased through better communication and increased dialogue.

### **7.1.2 Effects of Demographics on Worker Motivation and Implications for Interventions**

Although all demographic variables had some impact on motivational outcomes, two major categories of worker demographics stand out: professional group and age. The effects of profession emerged for most measures, with nursing and allied health professional staff responding more negatively about performance and affective and cognitive outcomes than medical and service/administrative staff. Differences among professional groups was also seen in perceptions of the work environment and their own self-efficacy, with nursing staff (and often allied health professional staff) again having more negative perceptions. Medical staff rated their jobs higher in terms of overall motivational properties and specifically in skill variety, autonomy, and task identity. Autonomy and task identity were also high for service/administrative staff. These findings, mirrored in the results from the 360 degree assessment, indicate that interventions might need to be tailored by worker category to address specific areas needing attention. For example, the lower levels of self-efficacy, pride, task identity, and autonomy among nursing staff (and with the exception of self-efficacy, for allied health professional staff) could be targeted by interventions that address job design, supervision, and performance review and feedback for these two categories.

Age also showed significant impacts on affective and cognitive outcomes, with younger staff consistently rating themselves lower than older staff. Younger staff also had much lower ratings of the organizational context. Thus, attention to better organizational practices, as mentioned above, could assist in both increased retention of the “new generation.”

Gender did have some significant impacts on general job satisfaction, organizational commitment, and self-assessed general work attitude, with men rating themselves higher than women, even in the subset of nursing and allied professional staff. This differs from findings of other job satisfaction research among nurses in Jordan (Al-Ma’aitah et al., 1999; Al-Ma’aitah et al., 1996) which indicated that male nurses had lower levels of satisfaction than female nurses. These other studies also indicated that higher educated nurses were more dissatisfied than less educated nurses, and that, generally speaking, operational unit did not affect satisfaction levels.

### **7.1.3 Similarities across Groups and Comparison with Findings in Other Cultures**

Certain findings among the motivational determinants showed no variation among the various demographic sub-groupings. This, in and of itself, is an interesting finding. The desire for autonomy, feedback, achievement, and doing something worthwhile (job preferences) and self-reliance and desire to complete (effort orientation) showed no differences by profession, gender, hospital, or age. The overall mean rating for job preferences was 4.36 (on a scale of 1 to 5), and this finding is consistent with prior research suggesting that achievement, sense of competence, and self-determination represent fundamental and universal motives for behavior (Kanfer and Heggstad, 1997). Interestingly, however, the overall mean rating for effort orientation was 3.93 (on a 5-point scale). The lower mean score for this measure reflects the influence of context. That is, while individual differences in achievement reflect cross-situational values and tendencies to action, individual differences in effort orientation reflect judgments about the attractiveness of exerting effort in a particular context. That is, mean effort orientation scores may be lower than mean achievement scores when individuals seek to demonstrate mastery, but perceive that effort is not strongly related to the accomplishment of positive outcomes.



The consistent differences between performance assessments conducted by the workers themselves and their supervisors across all four sub-scales indicate significant disparity in how the organization and the worker view worker performance. Workers rated themselves higher than supervisors on conscientiousness, general work attitude, and attendance, while supervisors rated workers higher on getting along with others. Although differences in magnitude of differences were found related to gender, profession, and hospital, these patterns were true for all worker categories. The disparity in perceptions of performance between workers and supervisors merits further investigation. However, certain organizational factors may also explain the differences in perceptions; lack of clear guidelines for performance (currently no operative job descriptions), lack of transparency of the performance appraisal process, and probably also lack of supportive feedback from supervisors about performance could play a role.

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## **7.2 Methodological Lessons Learned in Implementation**

This study and its sister study in two hospitals in the Republic of Georgia are the first of its kind to be conducted in a developing country context. The study examined a very broad range of possible motivational determinants and a broad range of motivational outcomes. In Jordan, many of the scales used commonly in motivational research in the United States were validated in this context. However, some scales merit further adaptation and reliability testing.

Several of the motivational determinant scales used did not appear to adequately capture the desired construct for the Jordanian context, as reflected in alpha scores lower than 0.60: management openness, job-related feedback, physical and resource constraints, bureaucratic constraints, work locus of control, and job task identify. Although many of these constructs were significantly associated with motivational outcomes, further qualitative work should be done to examine the meaning of these constructs in the local context and to adjust scale items to create more powerful measures.

The performance measures used in this study were necessarily broad, reflecting generic work behaviors that would be applicable to all four professional categories. However, the need to cover all types of workers also meant losing a large degree of specificity that might be useful in measuring the effects of interventions to increase motivation and improve job performance. It would be useful to develop more profession-specific measures of performance that also reflect organizational objectives for each type of worker.

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## **7.3 Concluding Thoughts**

This research in Jordan indicates that public sector workers in Jordanian hospitals have the desire and aspirations to perform well on the job. However, many organizational and bureaucratic constraints impede workers from doing their job as they might wish and to feel satisfaction with their efforts. The research demonstrated the feasibility of doing this kind of study in the Jordanian environment and the lively discussions prompted from the dissemination of findings indicates the possibility of making improvements in worker motivation, and ultimately in hospital and health sector performance.



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# Annex A: Individual Worker Questionnaire

## Worker Attitude Survey

The Partnerships for Health Reform project and the Ministry of Health are jointly conducting this study on health worker motivation, focusing on Al-Basheer and Al-Ramtha hospitals. The preliminary phase of this research, the 360 degree assessment, has been completed and has constituted a base for this more in-depth phase of data collection regarding the situation of health workers in these two hospitals.

This survey is part of a larger project aimed at better understanding the beliefs, attitudes, and work conditions that contribute to employee motivation and job satisfaction. By gathering information from many employees, we hope to learn what factors are most important in affecting worker motivation, satisfaction, and job performance.

This booklet contains a series of brief questionnaires that take about 40 minutes to complete. Please answer EVERY question in the booklet. Instructions for how to respond to the different questionnaires in the booklet are provided at the top of each page. Please note that there are no right or wrong answers, just what YOU think and how YOU perceive your work situation.

All the information that you provide in this session will be held in confidentiality. Your responses will be kept by the researchers, and we will aggregate responses from all interviews so that no one individual will be identifiable. The aggregated information we collect from these interviews will be used to: (1) identify strengths and weaknesses in the current administrative system with respect to enhancing worker motivation, (2) assist us in developing recommendations to enhance motivation, satisfaction, and job performance among workers in this hospital

*[words in italics indicate added clarifications in Arabic]*

Subject Number \_\_\_\_

Hospital \_\_\_\_\_

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### I. Background Information

For each question below, either write in your answer or put an “X” beside the best response option.

1. What is your profession? (title)
2. How many years of experience do you have working in this profession? \_\_\_\_ yrs
3. Are you \_\_\_\_ Male or \_\_\_\_ Female?
4. How long have you been working for this hospital? \_\_\_\_ years and \_\_\_\_ months

5. How long have you been in your current job? \_\_\_\_\_ years and \_\_\_\_\_ months

6. What is your age? \_\_\_\_\_ years old

7. Do you supervise any other workers? \_\_\_\_\_ Yes \_\_\_\_\_ No

If yes:

Approximately how many workers do you supervise? \_\_\_\_\_

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## II. Values

Directions: use the scale below to indicate how much you agree or disagree with each statement by placing the number that best corresponds to your answer in the space next to the question number. Remember there are no right or wrong answers, only what is TRUE of you.

1	2	3	4	5
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

1. Dedication to work is a virtue.
2. Cooperation is a virtue in work.
3. Work should be done with sufficient effort
4. One should strive to achieve better results.
5. Work is a source of self-respect.
6. Consultation allows one to overcome obstacles and avoid mistakes.
7. Work is not an end in itself but a means to foster personal growth.
8. Devotion to quality work is a virtue.
9. Progress on the job can be obtained through self-reliance.
10. A successful person is one who meets deadlines at work.
11. A person can overcome difficulties in life and better him/herself by doing his/her job well.
12. A job is what you make of it.
13. On most jobs, people can pretty much accomplish whatever they set out to accomplish.
14. If you know what you want out of a job, you can find a job that gives it to you.
15. If employees are unhappy with a decision made by their boss, they should do something about it.

16. Getting a job you want is mostly a matter of luck.
17. Making money is primarily a matter of good fortune.
18. Most people are capable of doing their jobs well if they make the effort.
19. In order to get a really good job you need to have family members or friends in high places.
20. Promotions are usually a matter of good fortune.
21. When it comes to getting a really good job, who you know is more important than what you know.
22. Promotions are given to employees who perform well on the job.
23. To make a lot of money you have to know the right people.
24. It takes a lot of luck to be an outstanding employee on most jobs.
25. People who perform their jobs well generally get rewarded for it.
26. Most employees have more influence on their supervisors than they think they do.
27. The main difference between people who make a lot of money and people who make a little money is luck.
28. If I were known as a difficult worker, this would bring shame to my family.
29. If I do not put in a full day's work, I would feel bad even if no one else notices.
30. If my supervisor told me I did a poor job, I would feel ashamed.
31. If co-workers had to redo my work, I would feel ashamed.
32. If everyone were to know that I was not reliable, it would bring shame to my family.
33. If I do not do well, I feel bad, even if no one else notices.
34. If there were a goal I did not achieve at work, my family would feel shame.

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### III. Organizational Culture

Directions: use the scale below to indicate how much you agree or disagree with each statement by placing the number that best corresponds to your answer in the space next to the question number. Remember there are no right or wrong answers, only what is TRUE of you.

1	2	3	4	5
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

35. I feel comfortable saying what I really think to hospital management about how things are going at the hospital.
36. It would be difficult for me to say something that my supervisor or hospital director might disagree with.
37. This hospital has a good reputation in the community.
38. The majority of my co-workers in this hospital are proud to work here.
39. Co-workers at this hospital pride themselves in providing good services to patients.
40. My co-workers in this hospital regard their work as boring.
41. My co-workers help others if they fall behind in their work
42. My co-workers willingly [*without complaint*] share expertise and skills with other members of the unit.
43. My co-workers try to act like peacemakers when co-workers have disagreements.
44. My co-workers take steps to prevent problems with other co-workers.
45. My co-workers willingly give time to co-workers who have work-related problems.
46. My co-workers talk to co-workers before taking action that might affect them.
47. My co-workers provide constructive suggestions about how the unit can improve its effectiveness.
48. My co-workers are willing to risk disapproval in order to express beliefs about what is best for the unit.
49. My co-workers attend and actively participate in (team) meetings [*related to their work*].
50. My co-workers find fault [*criticize*] with what other co-workers are doing.
51. My co-workers discourage co-workers from complaining about trivial matters.
52. My co-workers focus on what is wrong with the situation, rather than the positive side.
53. I feel comfortable saying what I really think [*my true opinion*] to my supervisors about how things are happening in my work unit.

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#### IV. Workplace Conditions

Directions: use the scale below to indicate how much you agree or disagree with each statement by placing the number that best corresponds to your answer in the space next to the question number. Remember there are no right or wrong answers, only what is TRUE of you.

1	2	3	4	5
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

54. The work I do provides me with direct feedback about the effectiveness (e.g., quality and quantity) of my performance.
55. My managers and co-workers provide me with feedback about the effectiveness (e.g., quality and quantity) of my performance.
56. My job provides the opportunity for social interaction such as teamwork or co-worker assistance.
57. My job duties, requirements, and goals are clear and specific.
58. I have a variety of duties, tasks, and activities in my job.
59. My job requires a high level of knowledge and skills.
60. My job requires a variety of knowledge and skills.
61. My job permits me to get information and talk to people about things that affect my work.
62. My job provides opportunities for advancement to higher level jobs.
63. My job gives me a feeling of achievement and accomplishment.
64. My job gives me the opportunity to participate in decisions that affect my job.
65. My job offers adequate pay compared with the job requirements and with pay in similar jobs.
66. My job offers job security as long as I do a good job.
67. There is much variety in my job.
68. My duties are very repetitious.
69. I am left on my own to do my own work. [*I can do my work the way I want, without interference*]
70. I often see projects or jobs through to completion.
71. It is easy for me to find out how well I am doing on the job as I am working.
72. I am able to do my job independently of others.
73. I have freedom to do pretty much what I want on my job.
74. I receive frequent feedback from individuals other than my supervisor.
75. I usually have the opportunity to complete work I start.
76. I have control over the pace of my work.

77. I usually have the opportunity to do a job from the beginning to end (i.e., the chance to do a whole job)

78. I have a lot of opportunity for independent thought and action.

Directions: use the scale below to indicate how much the following items are important or not important for you in your work. Place the number that best corresponds to your response in the space next to the question number.

Scale:

1	2	3	4	5
Very unimportant to me	Unimportant	Neither important nor unimportant	Important	Very important to me

79. Being able to do a complete piece of work. [*Opportunity to do the job from beginning to end*].

80. Have considerable freedom to adopt my own approach to the job.

81. Being able to judge my work performance, right away, when actually doing the job.

82. Have a job that gives me a feeling of doing something really worthwhile.

83. Being able to achieve something that I really value.

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## V. Personality

Directions: use the scale below to indicate how much you agree or disagree with each statement by placing the number that best corresponds to your answer in the space next to the question number. Remember there are no right or wrong answers, only what is TRUE of you.

1	2	3	4	5
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

84. I am confident about my ability to handle work problems.

85. I effectively cope with any important changes that occur in my work life

86. I feel that at work things are going the way I would like them to.

87. I feel that I have control of things concerning my work.

88. Even when my work is boring, I can keep focused on my tasks.

89. I consider myself to have self-control.



90. On difficult tasks, I check my progress frequently.
91. I am easily distracted in my job.
92. I like to set specific work goals for myself.
93. When I am worried about something, I can not do my work.
94. I do not let my emotions interfere with my work.
95. It is easy for me to keep myself from being distracted.
96. I prefer to put off more difficult tasks to the end.
97. I have a difficult time concentrating when I am upset (bothered by something).
98. When I have a boring task to do, I make a game of it.
99. I do not like to quit a task until it's done.
100. It is important for me to do my work as well as I can even doing it well isn't popular with my co-workers.
101. I find satisfaction in working as well as I can.
102. There is satisfaction in a job well done.
103. I find satisfaction in exceeding my previous performance even if I don't outperform others.
104. I like to work hard.
105. Part of my enjoyment in doing things [*my work*] is improving my past performance.

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## VI. Organizational Constraints/Obstacles

Directions: use the scale below to indicate how much you agree or disagree with each statement by placing the number that best corresponds to your answer in the space next to the question number. Remember there are no right or wrong answers, only what is TRUE of you.

1	2	3	4	5
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

106. This hospital provides everything I need to do my job effectively.
107. A fundamental reason I do not do my job properly is that I do not have the equipment, supplies and/or materials I need.
108. I have the necessary materials, supplies and equipment to do a good job.

109. My work is rarely disrupted due to bureaucratic processes.

110. There are few instructions that obstruct and delay work.

111. I am often prevented from getting my work done effectively and efficiently by bureaucracy and un-needed processes.

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## VII. Performance Consequences of Motivation

Think about your job activities over the past six months. For each statement below, indicate how YOU have performed your job. Place the number that best corresponds to your answer to the left of the statement.

Scale:

1	2	3	4	5
Very true of me	Usually true of me	Sometimes true of me	Rarely true of me	Not at all true of me

112. I am punctual about coming to work.

113. I am reliable and dependable at work.

114. I always finish my work on time.

115. My work is of high quality.

116. I am a hard worker.

117. I do things that need doing without being asked or told.

118. I am very knowledgeable about my job.

119. I do not get defensive or upset when criticized.

120. I get upset at work.

121. I am careful not to make errors.

122. I keep updated on new equipment and procedures.

123. I get along well with my co-workers.

124. I get along well with my supervisor.

125. I maintain a positive attitude toward my work.

126. My work attendance record is very good.

127. I am rarely absent from work.
128. I am a fast worker.
129. I spend my time at work on work-related activities.

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### **VIII. Affective Consequences of Motivation**

Directions: Use the scale below to indicate how satisfied you are with the following aspects of your job, by placing the number which best indicates your response in the space beside the question number.

Scale:

1	2	3	4	5
Very satisfied	Moderately satisfied	Neither satisfied nor dissatisfied	Moderately dissatisfied	Very dissatisfied

130. All in all, how satisfied are you with your co-workers in your work unit?
131. All in all, how satisfied are you with your supervisor?
132. All in all, how satisfied are you with your job?
133. Considering your skills and the effort you put into your work, how satisfied are you with your pay?
134. How satisfied are you with the management in your work unit?
135. How satisfied are you with your opportunity to use your abilities in your job?
136. How satisfied are you with the chances you have to learn new things?
137. How satisfied are you with the chances you have to accomplish something worthwhile?
138. How satisfied are you with the chances you have to do something that makes you feel good about yourself as a person?
139. How satisfied are you with the fringe benefits you receive?
140. How satisfied are you with the educational/training opportunities you get?
141. How satisfied are you with the physical working conditions (space, lighting, and ventilation)?

Directions: use the scale below to indicate how much you agree or disagree with each statement by placing the number that best corresponds to your answer in the space next to the question number. Remember there are no right or wrong answers, only what is TRUE of you.

1	2	3	4	5
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

142. I am willing to put in a great deal of effort beyond that normally expected in order to ensure that our work at this hospital is successful.

143. I often tell my friends that this hospital is a great organization to work for.

144. I feel very little commitment to this hospital.

145. I find that my values and this hospital's values are very similar.

146. I am proud to tell others that I am part of this hospital.

147. This hospital really inspires me to do my very best on the job.

148. I am extremely glad I work for this hospital, as opposed to other hospitals I might have worked for.

149. It would take very little change in my present personal circumstances to cause me to leave this hospital.

150. There is not too much to be gained professionally by working for this hospital (indefinitely) [*permanently*].

151. Often, I find it difficult to agree with this hospital's policies on important matters relating to its employees.

152. For me, this is the best of all possible hospitals to work for.

153. Accepting to work for this hospital was a definite mistake on my part.

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## IX. Cognition Consequences of Motivation

Directions: Use the scale below to indicate how satisfied you are with the following aspects of your job, by placing the number which best indicates your response in the space beside the question number.

Scale:

1	2	3	4	5
Very satisfied	Moderately satisfied	Neither satisfied nor dissatisfied	Moderately dissatisfied	Very dissatisfied

154. How satisfied are you that you have been given enough authority by your superiors to do your job well?

155. How satisfied are you with your present job when you compare it to similar positions in Jordan?

156. How satisfied are you with the progress you are making toward the goals which you set for yourself in your present situation?
157. On the whole, how satisfied are you that your superior accepts you as a professional expert to the degree which you are entitled by reason of your position, training and experience?
158. On the whole, how satisfied are you with your present job when you consider the expectations you had when you started working here?
159. How satisfied are you with your present job in light of (career) [*future professional*] expectations?

## Supervisory Assessment of Worker Performance

Think about the performance of workers in your unit over the past six months. For each statement below, indicate how each one has performed his/her job. Place the number that best corresponds to your answer to the left of the statement.

1	2	3	4	5
Always true of this person	Usually true of this person	Sometimes true of this person	Rarely true of this person	Not at all true of this person

	Performance component	Name	Name	Name
	ID Number			
170	punctual about coming to work			
171	reliable and dependable at work			
172	always finish his/her work on time			
173	work is of high quality			
174	a hard worker			
175	does things that need doing without being asked or told			
176	very knowledgeable about his/her job			
177	does not get defensive or upset when criticized			
178	gets upset at work			
179	Is careful not to make errors			
180	keeps updated on new equipment and procedures			
181	gets along well with co-workers			
182	gets along well with supervisor			
183	maintains a positive attitude toward his/her work			
184	work attendance record is very good			
185	rarely absent from work			
186	a fast worker			
187	Spends his/her time at work on work-related activities			

## Secondary Data for Physicians

[illegible]

### Secondary Data for Nurses

[illegible]



## Secondary Data for Other Workers

[illegible]



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## Annex B: Item Composition of Scales and Subscales

Table A-1 below presents the specific items retained for each of the 29 scales and subscales. Some of the retained scales had no modifications from the original list of items included in the questionnaire for that scale. The following describes changes from the original scales. Most changes were made during questionnaire design, with only a few changes originating from the factor analysis.

- > ***Islamic work ethic:*** Ali's (1988) original scale contained 53 items. This scale was further modified by Abu-Saad (1998) to contain only 27 items in three categories: 1) personal and organizational obligations ( $\alpha = 0.87$ ), 2) personal investment and dividends ( $\alpha = 0.76$ ), and 3) personal effort and achievement ( $\alpha = 0.73$ ). 11 of those, based on the factor loadings reported in Ali (1998) were chosen to be included in the IWQ questionnaire. However the factor analysis led to dropping 3 additional items (questions 4, 5, and 7) to obtain a better alpha score.
- > ***Job characteristics index:*** The original scale contained 30 items (Sims et al (1976) in six categories: variety, autonomy, feedback, dealing with others, task identify, and friendship. Because it was being used in conjunction with Edwards et al (1999) motivational job properties scale, the number of categories was reduced to 4 (removing "dealing with others" and "friendship"), and the number of individual items was reduced to 11 items total. As a result, it was not possible to produce reliable enough scores for job variety and for feedback. Thus, two variety items and two feedback items from Edwards' scale were added to the items from Simms, creating composite scales for those two items. The alpha score for job skill variety increased to 0.70, while the alpha for feedback still remained low at 0.35.
- > ***Organizational constraints:*** Two scales on bureaucratic and physical working constraints were developed for the IWQ questionnaire, each containing 3 items. However, the factor analysis led to dropping one item from each scale (questions 106 and 111).
- > ***Performance subscales:*** Analysis of the performance scale developed by Kanfer for this research revealed 4 subscales on workers' self-assessment of performance, with two items being dropped (questions 121 and 122). However, two subscales, general work attitude and attendance, had fairly low alpha values: 0.41 and 0.47 respectively. Interestingly, when these same subscales were run on the supervisory assessment of performance, the alpha values were higher (0.67 and 0.82 respectively).
- > ***Affective motivation (organizational commitment):*** Based on the results of the factor analysis, a single item was dropped from the original scale (question 142).

**Table A-1: Retained Scales and Subscales**

\* item was reverse-scored

Scale	Items	Mean	Alpha
Work as a virtue	Dedication to work is a virtue. Cooperation is a virtue in work	4.75	0.81
Values orientation to work	Work should be done with sufficient effort Consultation allows one to overcome obstacles and avoid mistakes. Devotion to quality work is a virtue.	4.56	0.70
Effort orientation to work	Progress on the job can be obtained through self- reliance. A successful person is one who meets deadlines at work. A person can overcome difficulties in life and better him/herself by doing his/her job well.	3.92	0.56
Work locus of control	* A job is what you make of it. * On most jobs, people can pretty much accomplish whatever they set out to accomplish. * If you know what you want out of a job, you can find a job that gives it to you. * If employees are unhappy with a decision make by their boss, they should do something about it. Getting a job you want is mostly a matter of luck. Making money is primarily a matter of good fortune. * Most people are capable of doing their jobs well if they make the effort. In order to get a really good job you need to have family members or friends in high places. Promotions are usually a matter of good fortune. When it comes to getting a really good job, who you know is more important than what you know. * Promotions are given to employees who perform well on the job. To make a lot of money you have to know the right people. It takes a lot of luck to be an outstanding employee on most jobs. * People who perform their jobs well generally get rewarded for it. * Most employees have more influence on their supervisors than they think they do. The main difference between people who make a lot of money and people who make a little money is luck.	2.70	0.55
Personal/social consequences of poor performance	If I were known as a difficult worker, this would bring shame to my family. If I do not put in a full day's work, I would feel badly even if no one else notices. If my supervisor told me I did a poor job, I would feel ashamed. If co-workers had to redo my work, I would feel ashamed. If everyone were to know that I was not reliable, it would bring shame to my family. If I do not do well, I feel badly, even if no one else notices. If there were a goal I did not achieve at work, my family would feel shame.	3.70	0.72
Management	I feel comfortable saying what I really think to hospital management	3.54	0.42

openness	<p>about how things are going at the hospital.</p> <p>* It would be difficult for me to say something that my supervisor or hospital director might disagree with.</p> <p>I feel comfortable saying what I really think [my true opinion] to my supervisors about how things are happening in my work unit.</p>		
Pride	<p>This hospital has a good reputation in the community.</p> <p>The majority of my co-workers in this hospital are proud to work here.</p> <p>Co-workers at this hospital pride themselves in providing good services to patients.</p> <p>* My co-workers in this hospital regard their work as boring.</p>	3.22	0.78
Organizational citizenship behavior	<p>My co-workers help others if they fall behind in their work</p> <p>My co-workers willingly [<i>without complaint</i>] share expertise and skills with other members of the unit.</p> <p>My co-workers try to act like peacemakers when co-workers have disagreements.</p> <p>My co-workers take steps to prevent problems with other co-workers.</p> <p>My co-workers willingly give time to co-workers who have work-related problems.</p> <p>My co-workers talk to co-workers before taking action that might affect them.</p> <p>My co-workers provide constructive suggestions about how the unit can improve its effectiveness.</p> <p>My co-workers are willing to risk disapproval in order to express beliefs about what is best for the unit.</p> <p>My co-workers attend and actively participate in (team) meetings [<i>related to their work</i>].</p> <p>* My co-workers find fault [<i>criticize</i>] with what other co-workers are doing.</p> <p>My co-workers discourage co-workers from complaining about trivial matters.</p> <p>* My co-workers focus on what is wrong with the situation, rather than the positive side.</p>	3.38	0.85
Motivational properties of the job	<p>The work I do provides me with direct feedback about the effectiveness (e.g., quality and quantity) of my performance.</p> <p>My managers and co-workers provide me with feedback about the effectiveness (e.g., quality and quantity) of my performance.</p> <p>My job provides the opportunity for social interaction such as team work or co-worker assistance.</p> <p>My job duties, requirements, and goals are clear and specific.</p> <p>I have a variety of duties, tasks, and activities in my job.</p> <p>My job requires a high level of knowledge and skills.</p> <p>My job requires a variety of knowledge and skills.</p> <p>My job permits me to get information and talk to people about things that affect my work.</p> <p>My job provides opportunities for advancement to higher level jobs.</p> <p>My job gives me a feeling of achievement and accomplishment.</p> <p>My job gives me the opportunity to participate in decisions that affect my job.</p> <p>My job offers adequate pay compared with the job requirements and with pay in similar jobs.</p>	3.48	0.77

	My job offers job security as long as I do a good job.		
Job skill variety	I have a variety of duties, tasks, and activities in my job. My job requires a variety of knowledge and skills. There is much variety in my job.	3.76	0.70
Job autonomy	I am left on my own to do my own work.[I can do my work the way I want, without interference] I am able to do my job independently of others. I have freedom to do pretty much what I want on my job. I have control over the pace of my work. I have a lot of opportunity for independent thought and action.	3.09	0.67
Job task identify	I often see projects or jobs through to completion. I usually have the opportunity to complete work I start. I usually have the opportunity to do a job from the beginning to end (i.e., the chance to do a whole job)	3.65	0.61
Job feedback	The work I do provides me with direct feedback about the effectiveness e.g., quality and quantity) of my performance. My managers and co-workers provide me with feedback about the effectiveness (e.g., quality and quantity) of my performance. I receive frequent feedback from individuals other than my supervisor.	3.37	0.35
Job preferences scale	Being able to do a complete piece of work. [Opportunity to do the job from beginning to end]. Have considerable freedom to adopt my own approach to the job. Being able to judge my work performance, right away, when actually doing the job. Have a job that gives me a feeling of doing something really worthwhile. Being able to achieve something that I really value.	4.36	0.62
Generalized self-efficacy	I am confident about my ability to handle work problems. I effectively cope with any important changes that occur in my work life I feel that at work things are going the way I would like them to. I feel that I have control of things concerning my work.	3.63	0.67
Motivational control	Even when my work is boring, I can keep focused on my tasks. I consider myself to have self control. On difficult tasks, I check my progress frequently. I like to set specific work goals for myself. It is easy for me to keep myself from being distracted. I do not like to quit a task until it's done.	4.11	0.63
Emotional control	* When I am worried about something, I can not do my work. * I have a difficult time concentrating when I am upset (bothered by something).	2.98	0.71
Desire for work achievement	It is important for me to do my work as well as I can even doing it well isn't popular with my co-workers. I find satisfaction in working as well as I can. There is satisfaction in a job well done. I find satisfaction in exceeding my previous performance even if I don't outperform others. I like to work hard.	4.43	0.76

	Part of my enjoyment in doing things [ <i>my work</i> ] is improving my past performance.		
Lack of physical constraints	* A fundamental reason I do not do my job properly is that I do not have the equipment, supplies and/or materials I need. I have the necessary materials, supplies and equipment to do a good job.	2.69	0.54
Lack of bureaucratic constraints	My work is rarely disrupted due to bureaucratic processes. There are few instructions that obstruct and delay work.	3.37	0.31
Conscientiousness	I am punctual about coming to work. I am reliable and dependable at work. I always finish my work on time. My work is of high quality. I am a hard worker. I do things that need doing without being asked or told. I am very knowledgeable about my job. I spend my time at work on work-related activities.	4.40	0.89
General work attitude	I do not get defensive or upset when criticized. * I get upset at work. I maintain a positive attitude toward my work. I am a fast worker.	3.98	0.41
Get along with others	I get along well with my co-workers. I get along well with my supervisor	4.17	0.83
Attendance	My work attendance record is very good. I am rarely absent from work.	4.47	0.47
General job satisfaction	All in all, how satisfied are you with your co-workers in your work unit? All in all, how satisfied are you with your supervisor? All in all, how satisfied are you with your job? Considering your skills and the effort you put into your work, how satisfied are you with your pay? How satisfied are you with the management in your work unit?	3.39	0.73
Intrinsic job satisfaction	How satisfied are you with your opportunity to use your abilities in your job? How satisfied are you with the chances you have to learn new things? How satisfied are you with the chances you have to accomplish something worthwhile? How satisfied are you with the chances you have to do something that makes you feel good about yourself as a person?	3.04	0.86
Extrinsic job satisfaction	How satisfied are you with the fringe benefits you receive? How satisfied are you with the educational/training opportunities you get? How satisfied are you with the physical working conditions (space, lighting, and ventilation)?	2.37	0.67
Affective organizational commitment	I often tell my friends that this hospital is a great organization to work for. * I feel very little commitment to this hospital. I find that my values and this hospital's values are very similar.	3.48	0.91

	<p>I am proud to tell others that I am part of this hospital.</p> <p>This hospital really inspires me to do my very best on the job.</p> <p>I am extremely glad I work for this hospital, as opposed to other hospitals I might have worked for.</p> <p>* It would take very little change in my present personal circumstances to cause me to leave this hospital.</p> <p>* There is not too much to be gained professionally by working for this hospital (indefinitely) [<i>permanently</i>].</p> <p>Often, I find it difficult to agree with this hospital's policies on important matters relating to its employees.</p> <p>For me, this is the best of all possible hospitals to work for.</p> <p>* Accepting to work for this hospital was a definite mistake on my part.</p>		
Cognitive motivation	<p>How satisfied are you that you have been given enough authority by your superiors to do your job well?</p> <p>How satisfied are you with your present job when you compare it to similar positions in Jordan?</p> <p>How satisfied are you with the progress you are making toward the goals which you set for yourself in your present situation?</p> <p>One the whole, how satisfied are you that your superior accepts you as a professional expert to the degree which you are entitled by reason of your position, training and experience?</p> <p>On the whole, how satisfied are you with your present job when you consider the expectations you had when you started working here?</p> <p>How satisfied are you with your present job in light of (career) [<i>future professional</i>] expectations?</p>	3.09	0.86



## Annex C: Correlation Matrix for All Scales

	Mean	Std. Deviation	N	HOSPITAL	PROFESS	YRSEXP	GENDER	YRSHOSP
HOSPITAL	-	-	509	1				
PROFESS	-	-	509	0.018	1			
YRSEXP	11.50	6.350	510	0.005	-.135(**)	1		
GENDER	-	-	510	-.193(**)	.137(**)	-.195(**)	1	
YRSHOSP	8.06	5.810	509	-.092(*)	.101(*)	.668(**)	0.01	1
YRSJOB	7.48	5.810	498	-0.061	.124(**)	.587(**)	0.03	.837(**)
AGE	35.57	7.920	506	0.069	-.249(**)	.819(**)	-.353(**)	.513(**)
SUPERVIS	1.71	0.450	507	0.083	.185(**)	-.233(**)	0.072	-.123(**)
NUMSUPER	23.67	33.200	144	-.222(**)	-0.088	.296(**)	-0.124	.244(**)
IS_VIRTU	4.75	0.460	509	0.057	-0.079	0.042	-.103(*)	-0.04
IS_VALUE	4.56	0.387	509	0.041	-.151(**)	.125(**)	-.221(**)	-0.013
IS_ACHIE	3.93	0.713	509	0.054	-0.005	0.041	-0.015	0.058
WLOCUS	2.70	0.555	510	-0.015	-0.034	-.133(**)	.090(*)	-.114(*)
SHAME	3.69	0.623	509	0.02	-.091(*)	-0.054	-.113(*)	-.104(*)
MGT_OPEN	3.55	0.775	510	.135(**)	-0.004	.234(**)	-.140(**)	.127(**)
PRIDE	3.22	0.857	510	.193(**)	0.026	.265(**)	-.245(**)	.185(**)
OCB	3.38	0.670	510	0.049	-0.05	.219(**)	-.199(**)	.158(**)
MOT_PROP	3.48	0.590	510	0.02	-.113(*)	.239(**)	-.145(**)	.135(**)
SKILLVAR	3.77	0.811	510	-0.033	-.264(**)	.232(**)	-.214(**)	.115(**)
AUTONOMY	3.10	0.804	510	0.037	.094(*)	.204(**)	-0.033	.137(**)
TASK_ID	3.65	0.738	510	0.028	0.05	.167(**)	-0.04	0.016
FEEDBACK	3.04	1.094	507	0.027	-0.054	-0.04	-0.081	-.097(*)
FEED_NEW	3.37	0.707	510	0.043	-0.031	.124(**)	-.145(**)	0.015
JOB_PREF	4.37	0.502	509	-0.033	-.095(*)	-0.027	0.007	-.121(**)
SELF_EFF	3.63	0.651	509	0.066	0	.300(**)	-.258(**)	.137(**)
MCONTROL	4.11	0.432	508	-0.022	-0.069	.124(**)	-.104(*)	0.012
ECONTROL	2.98	0.948	508	-.089(*)	0.031	0.007	.093(*)	-0.028
WOFO	4.43	0.451	508	-0.002	-.095(*)	.092(*)	-.152(**)	-0.017
PHYSICAL	2.69	0.948	510	.092(*)	.098(*)	.109(*)	-0.017	0.083
BUREAU	3.37	0.806	508	-.189(**)	-0.01	-.102(*)	.119(**)	-0.052
CONSCIEN	4.40	0.596	510	0.07	.094(*)	.112(*)	-0.058	.094(*)
GEN_ATT	3.98	0.582	510	.120(**)	0.063	.131(**)	-.171(**)	0.042
GETALONG	4.17	0.859	510	0.024	0.044	.137(**)	-.103(*)	0.079
ATTENDAN	4.47	0.781	510	-0.008	-0.036	0.072	-.088(*)	-0.009
JOBSAT	3.39	0.765	508	.171(**)	0.046	.215(**)	-.179(**)	.139(**)
INTR_SAT	3.04	1.047	507	0.056	0.079	.181(**)	-0.042	.193(**)

EXTR_SAT	2.37	1.004	508	0.07	0.075	.130(**)	-0.045	.168(**)
AFCOMMIT	3.48	0.673	508	0.005	0.068	.232(**)	-.291(**)	.171(**)
COGMOTIV	3.09	0.924	506	0.081	0.023	.226(**)	-.136(**)	.151(**)

\*\* Correlation is significant at the 0.01 level (2-tailed); \* Correlation is significant at the 0.05 level (2-tailed); (a) cannot be computed because atleast one of the variables is constant.

	YRSJOB	AGE	SUPERVIS	NUMSUPER	IS_VIRTU	IS_VALUE	IS_ACHIE	WLOCUS	SHAME
HOSPITAL									
PROFESS									
YRSEXP									
GENDER									
YRSHOSP									
YRSJOB	1								
AGE	.403(**)	1							
SUPERVIS	-0.003	-.264(**)	1						
NUMSUPER	0.095	.304(**)	.(a)	1					
IS_VIRTU	-0.042	0.072	-0.057	-0.088	1				
IS_VALUE	-0.046	.193(**)	-.126(**)	-0.009	.412(**)	1			
IS_ACHIE	0.054	0.083	0.025	0.046	.137(**)	.278(**)	1		
WLOCUS	-.107(*)	-.133(**)	0.017	-.219(**)	-.145(**)	-.200(**)	-.231(**)	1	
SHAME	-0.088	-0.007	-0.023	-.197(*)	.177(**)	.208(**)	.139(**)	0.074	1
MGT_OPEN	0.078	.267(**)	-.137(**)	.226(**)	0.075	.148(**)	.150(**)	-.354(**)	-0.012
PRIDE	.143(**)	.350(**)	-.088(*)	.251(**)	0.072	.125(**)	.188(**)	-.327(**)	0.032
OCB	.124(**)	.239(**)	-0.023	0.132	.155(**)	.210(**)	.140(**)	-.255(**)	0.049
MOT_PROP	0.075	.274(**)	-.225(**)	0.092	.143(**)	.280(**)	.280(**)	-.292(**)	.127(**)
SKILLVAR	.110(*)	.261(**)	-.214(**)	0.107	.115(**)	.304(**)	.242(**)	-.172(**)	.152(**)
AUTONOMY	.101(*)	.228(**)	-0.043	0.044	-0.01	.119(**)	.271(**)	-.132(**)	0.05
TASK_ID	-0.015	.173(**)	-.104(*)	-0.045	.119(**)	.223(**)	.299(**)	-.165(**)	.146(**)
FEEDBACK	-.103(*)	-0.041	-0.043	0.068	0.013	0.026	0.008	.096(*)	.114(*)
FEED_NEW	-0.037	.131(**)	-.126(**)	0.102	.118(**)	.155(**)	.168(**)	-.170(**)	.113(*)
JOB_PREF	-.103(*)	-0.036	-.091(*)	-0.016	.196(**)	.266(**)	.121(**)	0.054	.170(**)
SELF_EFF	.099(*)	.355(**)	-.229(**)	.202(*)	0.069	.280(**)	.205(**)	-.254(**)	.090(*)
MCONTROL	0.037	.118(**)	-.131(**)	0.076	.247(**)	.354(**)	.233(**)	-.150(**)	.252(**)
ECONTROL	-0.01	-0.042	-0.06	-0.098	0.028	0.056	-0.018	-.120(**)	-0.068
WOFO	-0.044	.171(**)	-.174(**)	0.147	.250(**)	.406(**)	.232(**)	-.121(**)	.284(**)
PHYSICAL	0.032	.118(**)	0.039	0.145	0.054	0.049	.093(*)	-.154(**)	0.083
BUREAU	-0.083	-.150(**)	-0.009	0.018	0	0.016	-0.043	.102(*)	0.08
CONSCIEN	0.04	0.055	-0.03	-0.093	.090(*)	.172(**)	.187(**)	-0.011	-0.029
GEN_ATT	0.025	0.087	-0.081	-0.088	.092(*)	.159(**)	0.059	-.110(*)	-0.033
GETALONG	0.026	.176(**)	-0.032	-0.029	.101(*)	.162(**)	.151(**)	-.130(**)	0.063
ATTENDAN	-0.056	0.067	-.100(*)	-0.08	0.073	.150(**)	0.03	-0.03	0.009
JOBSAT	.108(*)	.236(**)	-.120(**)	0.047	.117(**)	.108(*)	.171(**)	-.365(**)	0.035
INTR_SAT	.190(**)	.157(**)	-0.069	0.121	-0.028	0.073	.214(**)	-.229(**)	0.023
EXTR_SAT	.127(**)	.148(**)	-0.002	0.101	-0.001	0.016	.214(**)	-.293(**)	0.008
AFCOMMIT	.124(**)	.286(**)	-.105(*)	0.135	0.079	.241(**)	.233(**)	-.351(**)	0.076
COGMOTIV	0.082	.273(**)	-.154(**)	.197(*)	0.014	.092(*)	.205(**)	-.335(**)	-0.03

\*\* Correlation is significant at the 0.01 level (2-tailed); \* Correlation is significant at the 0.05 level (2-tailed); (a) cannot be computed because atleast one of the variables is constant

	MGT_OPEN	PRIDE	OCB	MOT_PROP	SKILLVAR	AUTONOMY	TASK_ID
HOSPITAL							
PROFESS							
YRSEXP							
GENDER							
YRSHOSP							
YRSJOB							
AGE							
SUPERVIS							
NUMSUPER							
IS_VIRTU							
IS_VALUE							
IS_ACHIE							
WLOCUS							
SHAME							
MGT_OPEN	1						
PRIDE	.376(**)	1					
OCB	.319(**)	.560(**)	1				
MOT_PROP	.388(**)	.517(**)	.498(**)	1			
SKILLVAR	.306(**)	.286(**)	.329(**)	.679(**)	1		
AUTONOMY	.255(**)	.313(**)	.213(**)	.388(**)	.248(**)	1	
TASK_ID	.236(**)	.319(**)	.309(**)	.464(**)	.323(**)	.552(**)	1
FEEDBACK	-0.071	-.110(*)	-0.046	0.063	0.015	0.056	0.06
FEED_NEW	.176(**)	.304(**)	.329(**)	.565(**)	.259(**)	.256(**)	.332(**)
JOB_PREF	-0.025	-0.047	-0.036	.125(**)	.153(**)	.106(*)	.221(**)
SELF_EFF	.389(**)	.449(**)	.404(**)	.491(**)	.351(**)	.430(**)	.421(**)
MCONTROL	.233(**)	.203(**)	.251(**)	.338(**)	.329(**)	.171(**)	.308(**)
ECONTROL	0.078	0.038	.146(**)	0.04	.099(*)	0.021	.128(**)
WOFO	.176(**)	.160(**)	.160(**)	.330(**)	.335(**)	.156(**)	.255(**)
PHYSICAL	.187(**)	.302(**)	.180(**)	.229(**)	0.033	.180(**)	.234(**)
BUREAU	-.211(**)	-.249(**)	-.168(**)	-.164(**)	-.090(*)	-.178(**)	-.088(*)
CONSCIEN	0.072	.097(*)	.118(**)	.096(*)	.167(**)	.124(**)	.134(**)
GEN_ATT	.166(**)	.213(**)	.213(**)	.198(**)	.176(**)	.173(**)	.233(**)
GETALONG	.237(**)	.286(**)	.330(**)	.243(**)	.160(**)	.158(**)	.207(**)
ATTENDAN	0.05	0.05	.136(**)	.113(*)	.133(**)	-0.026	0.027
JOBSAT	.367(**)	.553(**)	.526(**)	.504(**)	.276(**)	.298(**)	.299(**)
INTR_SAT	.250(**)	.460(**)	.396(**)	.510(**)	.299(**)	.302(**)	.346(**)
EXTR_SAT	.250(**)	.468(**)	.344(**)	.457(**)	.244(**)	.283(**)	.267(**)
AFCOMMIT	.364(**)	.621(**)	.401(**)	.490(**)	.322(**)	.247(**)	.343(**)
COGMOTIV	.345(**)	.542(**)	.401(**)	.548(**)	.310(**)	.352(**)	.377(**)

\*\* Correlation is significant at the 0.01 level (2-tailed); \* Correlation is significant at the 0.05 level (2-tailed); (a) cannot be computed because atleast one of the variables is constant

	FEEDBACK	FEED_NEW	JOB_PREF	SELF_EFF	MCONTROL	ECONTROL	WOFO
HOSPITAL							
PROFESS							
YRSEXP							
GENDER							
YRSHOSP							
YRSJOB							
AGE							
SUPERVIS							
NUMSUPER							
IS_VIRTU							
IS_VALUE							
IS_ACHIE							
WLOCUS							
SHAME							
MGT_OPEN							
PRIDE							
OCB							
MOT_PROP							
SKILLVAR							
AUTONOMY							
TASK_ID							
FEEDBACK	1						
FEED_NEW	.557(**)	1					
JOB_PREF	0.063	.093(*)	1				
SELF_EFF	0.056	.323(**)	.182(**)	1			
MCONTROL	0.01	.242(**)	.334(**)	.399(**)	1		
ECONTROL	-.163(**)	-0.048	0.071	.155(**)	.151(**)	1	
WOFO	.092(*)	.300(**)	.273(**)	.378(**)	.573(**)	0.067	1
PHYSICAL	0.006	.207(**)	0.041	.244(**)	0.066	0.059	0.037
BUREAU	0.085	-0.015	-0.005	-.203(**)	0.079	-.132(**)	0.045
CONSCIEN	-0.078	0.029	.193(**)	.151(**)	.270(**)	.149(**)	.148(**)
GEN_ATT	-0.04	.152(**)	.087(*)	.215(**)	.254(**)	.262(**)	.183(**)
GETALONG	-0.048	.109(*)	.095(*)	.262(**)	.191(**)	.195(**)	.158(**)
ATTENDAN	0.039	0.077	.191(**)	0.082	.162(**)	.123(**)	.147(**)
JOBSAT	0.003	.331(**)	-0.06	.442(**)	.141(**)	0.079	.108(*)
INTR_SAT	-0.014	.337(**)	-0.021	.297(**)	.113(*)	0.042	0.071
EXTR_SAT	-0.028	.281(**)	-0.042	.296(**)	0.035	-0.028	0.007
AFCOMMIT	-.099(*)	.272(**)	0.065	.476(**)	.256(**)	.131(**)	.246(**)
COGMOTIV	-0.031	.357(**)	-0.007	.427(**)	.163(**)	.090(*)	.168(**)

\*\* Correlation is significant at the 0.01 level (2-tailed); \* Correlation is significant at the 0.05 level (2-tailed); (a) cannot be computed because atleast one of the variables is constant

	PHYSICAL	BUREAU	CONSCIEN	GEN_ATT	GETALONG	ATTENDAN	JOBSAT
HOSPITAL							
PROFESS							
YRSEXP							
GENDER							
YRSHOSP							
YRSJOB							
AGE							
SUPERVIS							
NUMSUPER							
IS_VIRTU							
IS_VALUE							
IS_ACHIE							
WLOCUS							
SHAME							
MGT_OPEN							
PRIDE							
OCB							
MOT_PROP							
SKILLVAR							
AUTONOMY							
TASK_ID							
FEEDBACK							
FEED_NEW							
JOB_PREF							
SELF_EFF							
MCONTROL							
ECONTROL							
WOFO							
PHYSICAL	1						
BUREAU	-.284(**)	1					
CONSCIEN	0.04	-0.042	1				
GEN_ATT	.090(*)	-.093(*)	.599(**)	1			
GETALONG	0.08	-.211(**)	.450(**)	.429(**)	1		
ATTENDAN	-0.036	0.021	.566(**)	.473(**)	.388(**)	1	
JOBSAT	.309(**)	-.252(**)	0.077	.216(**)	.327(**)	.109(*)	1
INTR_SAT	.363(**)	-.250(**)	.104(*)	.169(**)	.236(**)	0.051	.562(**)
EXTR_SAT	.424(**)	-.224(**)	0.004	0.081	.184(**)	-0.012	.586(**)
AFCOMMIT	.308(**)	-.221(**)	.147(**)	.282(**)	.286(**)	.124(**)	.535(**)
COGMOTIV	.376(**)	-.273(**)	0.062	.187(**)	.261(**)	0.05	.653(**)

\*\* Correlation is significant at the 0.01 level (2-tailed); \* Correlation is significant at the 0.05 level (2-tailed); (a) cannot be computed because atleast one of the variables is constant

	INTR_SAT	EXTR_SAT	AFCOMMIT	COGMOTIV
HOSPITAL				
PROFESS				
YRSEXP				
GENDER				
YRSHOSP				
YRSJOB				
AGE				
SUPERVIS				
NUMSUPER				
IS_VIRTU				
IS_VALUE				
IS_ACHIE				
WLOCUS				
SHAME				
MGT_OPEN				
PRIDE				
OCB				
MOT_PROP				
SKILLVAR				
AUTONOMY				
TASK_ID				
FEEDBACK				
FEED_NEW				
JOB_PREF				
SELF_EFF				
MCONTROL				
ECONTROL				
WOFO				
PHYSICAL				
BUREAU				
CONSCIEN				
GEN_ATT				
GETALONG				
ATTENDAN				
JOBSAT				
INTR_SAT	1			
EXTR_SAT	.632(**)	1		
AFCOMMIT	.423(**)	.444(**)	1	
COGMOTIV	.577(**)	.590(**)	.556(**)	1

\*\* Correlation is significant at the 0.01 level (2-tailed); \* Correlation is significant at the 0.05 level (2-tailed); (a) cannot be computed because atleast one of the variables is constant





# Annex D: Demographic Variables: Results of the Regression Analyses and Mean Values

**Table A-2: Model Statistics for demographic variables: hospital, profession, gender, age**

	R <sup>2</sup>	Adjusted R <sup>2</sup>	Change in R <sup>2</sup>	Sig. F for change	T-test values	Sig. T-test
Affective and Cognitive Motivation						
General Satisfaction	.099	.092	.099	0.000	Hospital – 3.20 Profess. – 2.61 Gender ---1.83 Age -- 4.86	0.001 0.009— 0.000
Intrinsic Satisfaction	.042	.034	.042	0.000	Hospital – 0.89 Profess. – 2.80 Gender -- 0.32 Age -- 3.97	-- 0.006 -- 0.000
Extrinsic Satisfaction	.040	.032	.040	0.000	Hospital – 1.34 Profess. – 2.71 Gender -- 0.32 Age -- 3.73	-- 0.007 -- 0.000
Organizational Commitment	.151	.144	.151	0.000	Hospital ---1.43 Profess. – 4.01 Gender ---5.12 Age -- 5.58	-- 0.000 0.000 0.000
Cognitive Motivation	.091	.084	.091	0.000	Hospital – 1.37 Profess. – 2.42 Gender ---0.92 Age -- 5.96	-- 0.016 -- 0.000
Worker Self-assessed Performance						
Conscientiousness	.019	.011	.019	0.045	Hospital – 1.09 Profess. – 2.42 Gender ---0.68 Age -- 1.54	-- 0.016 -- --
General Attitude	.047	.040	.047	0.000	Hospital – 2.01 Profess. – 2.18 Gender ---3.03 Age -- 1.20	0.044 0.029 0.003 --

Get Along with Others	.044	.036	.044	0.000	Hospital --- 0.19 Profess. - 2.25 Gender --- 1.09 Age --3.88	-- 0.025 -- 0.000
Attendance	.010	.002	.010	--	Hospital -- - 0.68 Profess. -- - 0.37 Gender --- 1.36 Age -- 0.96	-- -- -- --
Supervisor-assessed Worker Performance						
Conscientiousness	.065	.057	.065	0.000	Hospital – 4.38 Profess. – 3.10 Gender --- 0.82 Age --1.55	0.000 0.000 -- --
General Attitude	.047	.040	.047	0.000	Hospital – 4.81 Profess. – 0.49 Gender -- 0.07 Age -- 0.41	0.000 -- -- --
Get Along with Others	.014	.006	.014	--	Hospital – 1.64 Profess. – 1.57 Gender --- 1.04 Age ---0.50	-- -- -- --
Attendance	.015	.007	.015	--	Hospital – 1.90 Profess. – 0.87 Gender -- - 1.19 Age -- 0.44	-- -- -- --

**Table A-3: Performance outcomes by demographic variables**  
(for differences significant at  $p < 0.05$ )

	Worker assessment of performance				Supervisor assessment of worker performance			
	Consci-entious	Attitude	Get along	Attend-dance	Consci-entious	Attitude	Get along	Attend-dance
Overall mean	4.40	3.98	4.17	4.31	4.09	3.85	4.39	4.31
Hospital								
Al Basheer	--	3.95	--	--	4.02	3.78	--	--
Al Ramtha		4.12			4.49	4.32		
Profession								
Medical		4.01	4.33		4.09			
Nursing	--	3.87	3.97	--	3.95	--	--	--
Allied Hlth		4.02	4.06		4.04			
Ser/Admin		4.06	4.39		4.30			
Gender								
Male	--	4.07	4.25	4.53	4.15	--	4.44	4.37
Female		3.87	4.07	4.39	4.01		4.34	4.23
Age								
< 35 yrs	--	3.93	4.05	--	--	--	--	--
35+ yrs		4.04	4.28					

**Table A-4: Affective and cognitive motivational outcomes by demographic variables**  
(for differences significant at  $p , 0.05$ )

	General satisfaction	Intrinsic satisfaction	Extrinsic satisfaction	Organiza-tional commitment	Cognitive motivation
Overall mean	3.39	3.04	2.37	3.48	3.09
Hospital					
Al Basheer	3.33	--	--	--	--
Al Ramtha	3.66				
Profession					
Medical	3.50	3.01	2.41	3.63	3.30
Nursing	3.24	2.99	2.30	3.22	2.87
Allied Hlth	3.27	2.80	2.06	3.48	2.87
Ser/Admin	3.58	3.32	2.69	3.66	3.33
Gender					
Male	3.51	--	--	3.65	3.20
Female	3.24			3.26	2.94
Age					
< 35 yrs	3.25	2.90	2.25	3.30	2.90
35+ yrs	3.53	3.15	2.48	3.65	3.27



# Annex E: Motivational Determinants: Results of the Regression Analyses

**Table A-5: Model Statistics for Personal Values: Personal/social consequences of poor performance  
(as second model after forced entry of demographic variables)**

	R <sup>2</sup>	Adjusted R <sup>2</sup>	Change in R <sup>2</sup>	Sig. F for change	T-test values	Sig. T-test
<b>Affective and Cognitive Motivation</b>						
General Satisfaction	.098	.0089	.001	--	Conseq – 0.77	--
Intrinsic Satisfaction	.043	.033	.002	--	Conseq – 0.94	--
Extrinsic Satisfaction	.038	.029	.000	--	Conseq – 0.39	--
Organizational Commitment	.155	.146	.003	--	Conseq – 1.40	--
Cognitive Motivation	.091	.082	.001	--	Conseq – - 0.60	--
<b>Worker Self-assessed Performance</b>						
Conscientiousness	.021	.011	.001	--	Conseq – - .059	--
General Attitude	.049	.040	.002	--	Conseq – - 1.05	--
Get Along with Others	.048	.038	.005	--	Conseq – 0.74	--
Attendance	.010	.000	.000	--	Conseq – 0.05	--
<b>Supervisor-assessed Worker Performance</b>						
Conscientiousness	.066	.056	.001	--	Conseq – 0.74	--
General Attitude	.048	.038	.001	--	Conseq – 0.67	--
Get Along with Others	.014	.004	.000	--	Conseq – - 0.83	--
Attendance	.015	.005	.000	--	Conseq – - 0.33	--

“--” p > 0.05

Conseq = Personal/social consequences of poor performance

**Table A-6: Model Statistics for Work Ethic: work as a virtue, values work orientation, and effort orientation (as second model after forced entry of demographic variables)**

	R <sup>2</sup>	Adjusted R <sup>2</sup>	Change in R <sup>2</sup>	Sig. F for change	T-test values	Sig. T-test
<b>Affective and Cognitive Motivation</b>						
General Satisfaction	.125	.112	.027	0.002	Virtue -- 1.82 Values -- -0.27 Effort -- 3.07	-- -- 0.002
Intrinsic Satisfaction	.082	.069	.043	0.000	Virtue -- -1.48 Values -- 0.64 Effort -- 4.42	-- -- 0.000
Extrinsic Satisfaction	.081	.068	.044	0.000	Virtue -- -0.23 Values -- -1.11 Effort -- 4.87	-- -- 0.000
Organizational Commitment	.212	.201	.063	0.000	Virtue -- -0.27	--

					Values -- 2.96 Effort -- 4.38	0.003 0.000
Cognitive Motivation	.126	.113	.038	0.000	Virtue -- -0.71 Values -- 0.06 Effort -- 4.45	-- -- 0.000
<b>Worker Self-assessed Performance</b>						
Conscientiousness	.072	.059	.051	0.000	Virtue -- 0.58 Values -- 2.60 Effort -- 3.19	-- 0.010 0.002
General Attitude	.069	.056	.019	0.018	Virtue -- 0.61 Values -- 2.41 Effort -- 0.44	-- 0.016 --
Get Along with Others	.075	.062	.031	0.001	Virtue -- 1.05 Values -- 1.78 Effort -- 2.36	-- -- 0.019
Attendance	.028	.015	.018	0.028	Virtue -- 0.50 Values -- 2.52 Effort -- -0.22	-- 0.012 --
<b>Supervisor-assessed Worker Performance</b>						
Conscientiousness	.065	.052	.002	--	Virtue -- -0.67 Values -- 0.75 Effort -- 0.10	-- -- --
General Attitude	.052	.038	.006	--	Virtue -- -0.32 Values -- 1.48 Effort -- 0.39	-- -- --
Get Along with Others	.020	.006	.006	--	Virtue -- -0.75 Values -- 1.03 Effort -- 1.17	-- -- --
Attendance	.017	.003	.003	--	Virtue -- -0.29 Values -- 0.29 Effort -- 1.00	-- -- --

“—” p > 0.05

**Table A-7: Model Statistics for Personality I: self-efficacy, motivational control, emotional control  
(as second model after forced entry of demographic variables)**

	R <sup>2</sup>	Adjusted R <sup>2</sup>	Change in R <sup>2</sup>	Sig. F for change	T-test values	Sig. T-test
<b>Affective and Cognitive Motivation</b>						
General Satisfaction	.228	.217	.132	0.000	Self-Ef – 8.64 Mcont – 0.18 DesAc – 1.34	0.000 -- --
Intrinsic Satisfaction	.106	.093	.067	0.000	Self-Ef – 5.54 Mcont – 0.61 DesAc – -1.00	0.000 -- --
Extrinsic Satisfaction	.113	.100	.076	0.000	Self-Ef – 6.42 Mcont – -0.70 DesAc – -1.83	0.000 -- --
Organizational Commitment	.292	.282	.139	0.000	Self-Ef – 7.72 Mcont – 1.49 DesAc – 0.72	0.000 -- --
Cognitive Motivation	.213	.202	.124	0.000	Self-Ef – 7.98 Mcont – -.57 DesAc – 0.38	0.000 -- --
<b>Worker Self-assessed Performance</b>						

Conscientiousness	.097	.084	.077	0.000	Self-Ef – 0.49 Mcont -- 5.13 DesAc – -0.23	-- 0.000 --
General Attitude	.115	.103	.067	0.000	Self-Ef – 1.88 Mcont – 3.73 DesAc – 0.44	-- 0.000 --
Get Along with Others	.095	.082	0.53	0.000	Self-Ef – 3.26 Mcont – 1.92 DesAc – 0.45	0.001 -- --
Attendance	.037	.023	.027	0.004	Self-Ef – -0.27 Mcont – 2.13 DesAc – 1.33	-- 0.033 --
<b>Supervisor-assessed Worker Performance</b>						
Conscientiousness	.072	.059	.006	--	Self-Ef – -0.29 Mcont – 0.12 DesAc – -1.40	-- -- --
General Attitude	.048	.035	.001	--	Self-Ef – 0.22 Mcont – -0.00 DesAc – -0.63	-- -- --
Get Along with Others	.020	.006	.005	--	Self-Ef – 1.03 Mcont – -0.49 DesAc – -1.06	-- -- --
Attendance	.022	.008	.006	--	Self-Ef – 1.14 Mcont – 0.42 DesAc – -1.55	-- -- --

“—” p > 0.05

Self-Ef = self efficacy

Mcont = motivational control

DesAc = desire for work achievement

**Table A-8: Model Statistics for Personality II: Emotional control  
(as second model after forced entry of demographic variables)**

	R <sup>2</sup>	Adjusted R <sup>2</sup>	Change in R <sup>2</sup>	Sig. F for change	T-test values	Sig. T-test
<b>Affective and Cognitive Motivation</b>						
General Satisfaction	.107	.098	.011	0.014	Econtrol – 2.48	0.014
Intrinsic Satisfaction	.041	.032	.002	--	Econtrol – 1.07	--
Extrinsic Satisfaction	.037	.027	.001	--	Econtrol -- -0.52	--
Organizational Commitment	.176	.167	.023	0.000	Econtrol – 3.72	0.000
Cognitive Motivation	.099	.089	.101	0.020	Econtrol – 2.34	0.020
<b>Worker Self-assessed Performance</b>						
Conscientiousness	.045	.036	.026	0.000	Econtrol – 3.65	0.000
General Attitude	.128	.119	.080	0.000	Econtrol – 6.76	0.000
Get Along with Others	.084	.075	.042	0.000	Econtrol – 4.77	0.000
Attendance	.027	.017	.017	0.003	Econtrol – 2.94	0.003
<b>Supervisor-assessed Worker Performance</b>						
Conscientiousness	.065	.056	.000	--	Econtrol -- -0.39	--
General Attitude	.047	.037	.000	--	Econtrol -- -0.17	--
Get Along with Others	.019	.009	.005	--	Econtrol -- -1.52	--
Attendance	.015	.005	.000	--	Econtrol -- -0.24	--

“—” p > 0.05

Econtrol = emotional control

**Table A-9: Model Statistics for ????: job preferences, work locus of control  
(as second model after forced entry of demographic variables)**

	R <sup>2</sup>	Adjusted R <sup>2</sup>	Change in R <sup>2</sup>	Sig. F for change	T-test values	Sig. T-test
<b>Affective and Cognitive Motivation</b>						
General Satisfaction	.205	.196	.108	0.000	Job-pref -- -8.12 Wlocus -- -0.65	0.000 --
Intrinsic Satisfaction	.081	.070	.041	0.000	Job-pref -- -4.71 Wlocus -- 0.21	0.000 --
Extrinsic Satisfaction	.111	.100	.073	0.000	Job-pref -- - .6.32 Wlocus -- -0.33	0.000 --
Organizational Commitment	.250	.241	.099	0.000	Job-pref -- -7.77 Wlocus -- 2.53	0.000 0.012
Cognitive Motivation	.176	.166	.086	0.000	Job-pref -- -7.14 Wlocus -- 0.55	0.000 --
<b>Worker Self-assessed Performance</b>						
Conscientiousness	.065	.053	.044	0.000	Job-pref -- -0.16 Wlocus -- 4.84	-- 0.000
General Attitude	.066	.055	.018	0.009	Job-pref -- -2.14 Wlocus -- 2.34	0.033 0.020
Get Along with Others	.067	.056	.024	0.002	Job-pref -- -2.41 Wlocus -- 2.77	0.016 0.006
Attendance	.050	.038	.040	0.000	Job-pref -- -0.65 Wlocus -- 4.53	-- 0.000
<b>Supervisor-assessed Worker Performance</b>						
Conscientiousness	.066	.055	.000	--	Job-pref -- 0.28 Wlocus -- 0.26	-- --
General Attitude	.048	.037	.001	--	Job-pref -- -0.16 Wlocus -- 0.75	-- --
Get Along with Others	.015	.003	.001	--	Job-pref -- -0.59 Wlocus -- -0.08	-- --
Attendance	.016	.005	.001	--	Job-pref -- -0.60 Wlocus -- -0.39	-- --

“--” p > 0.05

Job-pref = preferences for job characteristics

Wlocus = work locus of control (negatively scored)

**Table A-10: Model Statistics for Organizational Culture: pride, organizational citizenship behavior  
(as second model after forced entry of demographic variables)**

	R <sup>2</sup>	Adjusted R <sup>2</sup>	Change in R <sup>2</sup>	Sig. F for change	T-test values	Sig. T-test
<b>Affective and Cognitive Motivation</b>						
General Satisfaction	.385	.378	.288	0.000	Pride -- 7.20 OCB -- 7.63	0.000 0.000
Intrinsic Satisfaction	.251	.242	.211	0.000	Pride -- 7.06 OCB -- 4.37	0.000 0.000
Extrinsic Satisfaction	.238	.228	.200	0.000	Pride -- 7.91 OCB -- 2.80	0.000 0.005
Organizational Commitment	.441	.434	.290	0.000	Pride -- 12.78 OCB -- 1.43	0.000 --
Cognitive Motivation	.324	.316	.234	0.000	Pride -- 9.22 OCB -- 3.00	0.000 0.003



<b>Worker Self-assessed Performance</b>						
Conscientiousness	.032	.020	.011	--	Pride -- 0.19 OCB -- 1.95	-- --
General Attitude	.087	.076	.039	0.000	Pride -- 1.81 OCB -- 2.68	-- 0.008
Get Along with Others	.138	.127	.095	0.000	Pride -- 2.33 OCB -- 4.75	0.020 0.000
Attendance	.025	.014	.015	0.021	Pride -- -0.75 OCB -- 2.67	-- 0.008
<b>Supervisor-assessed Worker Performance</b>						
Conscientiousness	.075	.064	.010	--	Pride -- -1.84 OCB -- 2.17	-- 0.031
General Attitude	.058	.047	.012	0.049	Pride -- -0.53 OCB -- 2.33	-- 0.020
Get Along with Others	.026	.014	.012	0.046	Pride -- -0.26 OCB -- 2.24	-- 0.026
Attendance	.019	.007	.004	--	Pride -- -0.48 OCB -- 1.39	-- --

“—” p > 0.05

**Table A-11: Model Statistics for Job Characteristics: management openness, motivational job properties, job autonomy, task-identify, feedback, lack of physical resource constraints, lack of bureaucratic constraints (as second model after forced entry of demographic variables)**

	R <sup>2</sup>	Adjusted R <sup>2</sup>	Change in R <sup>2</sup>	Sig. F for change	T-test values	Sig. T-test
<b>Affective and Cognitive Motivation</b>						
General Satisfaction	.366	.351	.267	0.000	Mgmttop – 3.46 Motprop – 6.58 Autonom – 0.89 Task-id -- 0.16 Feedback – 1.48 Physical – 3.30 Bureau – -2.18	0.001 0.000 -- -- -- 0.001 0.030
Intrinsic Satisfaction	.356	.342	.315	0.000	Mgmttop – 0.17 Motprop – 7.30 Autonom – 0.80 Task-id -- 1.35 Feedback – 1.19 Physical – 5.02 Bureau – -3.10	-- 0.000 -- -- -- 0.000 0.002
Extrinsic Satisfaction	.335	.320	.295	0.000	Mgmttop – 0.75 Motprop – 6.75 Autonom – 1.85 Task-id -- -0.86 Feedback – 0.05 Physical – 7.56 Bureau – -1.52	-- 0.000 -- -- -- 0.000 --
Organizational Commitment	.399	.385	.247	0.000	Mgmttop – 3.70 Motprop – 6.80 Autonom --1.33 Task-id -- 2.64 Feedback --0.72 Physical – 3.87 Bureau – -1.94	0.000 0.000 -- 0.009 -- 0.000 --
Cognitive Motivation	.424	.411	.333	0.000	Mgmttop – 2.25 Motprop – 6.90	0.027 0.000

					Autonom – 2.01 Task-id -- 1.32 Feedback –1.25 Physical – 5.37 Bureau – -2.86	0.045 -- -- 0.000 0.004
<b>Worker Self-assessed Performance</b>						
Conscientiousness	.041	.020	.022	--	Mgmtop – -0.19 Motprop – 1.54 Autonom – 0.80 Task-id -- 1.39 Feedback --0.91 Physical --0.43 Bureau – -0.18	-- -- - -- -- -- --
General Attitude	.110	.090	.063	0.000	Mgmtop – 1.18 Motprop – 1.21 Autonom –0.71 Task-id -- 2.74 Feedback – 0.58 Physical --0.12 Bureau – -0.60	-- -- -- 0.006 -- -- --
Get Along with Others	.134	.114	.090	0.000	Mgmtop – 2.34 Motprop – 2.36 Autonom --0.53 Task-id -- 2.08 Feedback –0.51 Physical --1.14 Bureau – -3.76	0.020 0.019 -- 0.038 -- -- 0.000
Attendance	.032	.010	.022	--	Mgmtop – 0.17 Motprop – 2.14 Autonom --1.57 Task-id -- 0.78 Feedback – 0.61 Physical --1.33 Bureau – 0.26	-- 0.033 -- -- -- -- --
<b>Supervisor-assessed Worker Performance</b>						
Conscientiousness	.86	.066	.022	--	Mgmtop – -1.06 Motprop – 2.36 Autonom –1.13 Task-id -- 0.82 Feedback –2.38 Physical –0.62 Bureau – -1.21	-- 0.019 -- -- 0.018 -- --
General Attitude	.071	.050	.024	--	Mgmtop – -0.87 Motprop –1.99 Autonom --0.15 Task-id --1.18 Feedback –1.23 Physical --1.26 Bureau – -1.93	-- -- 0.047 -- -- -- --
Get Along with Others	.033	.011	.019	--	Mgmtop – -0.04 Motprop – 1.89 Autonom –0.22 Task-id -- 0.47 Feedback –0.99 Physical --0.60 Bureau – -1.78	-- -- -- -- -- -- --
Attendance	.035	.014	.021	--	Mgmtop – 0.20 Motprop –1.63 Autonom –1.01 Task-id -- 0.55	-- -- -- --

					Feedback -0.57	--
					Physical --0.37	--
					Bureau - -2.23	0.026

“—” p > 0.05

Mgmtop = management openness

Motprop = motivational properties of the job

Autonom = job autonomy

Task-id = job task identity

Feedback = job feedback

Physical = lack of physical constraints

Bureau = lack of bureaucratic constraints



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## Annex F: Bibliography

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